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ST APPLICATIONS

The Magazine for Users of Atari ST, STE, Falcon and TT Computers — *Issue No. 25, January 1993*

THIS MONTH

Reviews

- Diamond Back II
- AT Speed C16
- Protext v5.53
- PD Spreadsheets
- C-manship Complete
- Practical Guide to Calamus
- Godel
- ADI Educational Software

Articles

- Desktop Ideas
- Falcon - Predator or Prey?
- Grafix Arts
- 10 Rules for PD Programmers
- Advanced ST Programming
- The C Users' Group(UK)

Regulars

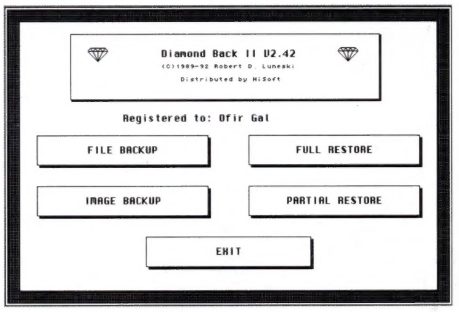
- News
- PD Update
- CAD Column
- STicks and STones
- Desktop Discussions
- Programmers' Forum
- Going On-Line
- Forum

Printed in the U.K.

PD Spreadsheets

The ST user who wants to keep track of his/her finances without spending a large proportion of them on commercial software should, argues Bob Osola, take a look at the PD and Shareware spreadsheets that are available. He reviews three of them in this issue: GEM Calc, Sheet and Opus, all of which offer friendliness and usability rather than esoteric accountancy functions.

Diamond Back II



Yet another backup utility? Ofir Gal reviews the latest in this long line: Diamond Back is a commercial package from HiSoft that offers more facilities and options than any of its competitors.

Falcon - Predator or Prey?

Atari's new machine is named after a predator, and its impressive specifications certainly allow for its tearing the opposition to shreds. The question remains, however, in the light of past experience, whether it will fall prey to Atari's marketing and support decisions. Michael Baxter looks at what the future might hold, without the help of rose-tinted spectacles.

Godel

This is possibly the first offering of its kind on the ST: a maths processor that can simplify and solve equations, perform calculus, and sum equation values in a given range. It's a shareware program that comes with on-line help in the form of a hypertext desk accessory called 'Guru'. David Harvey reviews them both inside.

The Compleat Swiss ...

Albanian Afrikaans Amharic Armenian Arabic Assamese Azeri Bihari Byelorussian Chinese Chuang Czech Danish Dzongkha English Esperanto Estonian Farsi Finnish French German Georgian Greek Gujarati Hebrew Hindi Hiragana Hungarian Icelandic Irish Italian Kanji Kashmiri Katekana Kazakh Khasi Kirghiz Kurdish Ladakhi Latvian Lithuanian Malaysian Manipuri Marathi Mizo Moldavian Mongolian Naga Nepali Norwegian Old Cyrillic Oromo Polish Portuguese Punjabi Pushto Rajasthani Russian Sanskrit Serbian Serbo-Croat Sindhi Slovene Slovak Spanish Swedish Tajik Tamil Tibetan Tigrinia Turkmen Uighur Ukranian Urdu Uzbek Vedic and more

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Read_Me 1st

Subscription Expired? If you received this copy of *ST Applications* through the post, check the first line of your address label carefully: if it reads STA25, then your subscription has expired with this issue; if the information line reads "Complimentary Copy" you have been sent a free evaluation copy of *ST Applications*. Either way, you must take out a new subscription in order to receive further issues.

Information

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New Address:

Mail sent to our old Stoney Street address will be forwarded and our telephone number is unchanged.

Owing to lease restrictions, we are no longer able to make retail sales from our offices. Callers by appointment only, please.

Advertising

There is a limited amount of space for commercial advertising in each issue of *ST Applications*. Contact Nicky Wilson on 0602-410241 for further details and to request a media-pack. Subscribers can place free classified advertisements - see page 57 for details.

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Subscription and Order form will be found on page 57.

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Worldwide Magazines, Unit 19, Chelmsley Wood Ind. Est., Waterloo Avenue, Chelmsley Wood, Birmingham B37 8QD. Tel: 021 788 3112; Fax: 021 788 1272.

Canadian office: Tel: 519 539 0200; Fax: 519 539 9725.

Contact us for details of your nearest *ST Applications* stockist.

Disk Mags

These are bi-monthly compilations of the best PD software to come to our attention in the preceding couple of months - not magazines on disk. The next Disk Mag, DMG.33, will be dispatched a few days after issue 26 is sent out.

CREDITS

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Contributions

The articles in *ST Applications* are written by users for users. Everyone reading this magazine will have something to contribute; even if you do not feel able to do a full-length review or article there is the Forum section for short hints, tips and questions. If you are interested in writing for *ST Applications* - regularly or irregularly - please write for a copy of our terms and conditions. We always do our best to reward quality work with appropriate remuneration.

Atari News

The chances of buying a Falcon for Christmas are dwindling fast. As we went to press, the machine was still unavailable but expected 'any day now'. Atari UK have confirmed that they only expect to ship 5,000-8,000 machines before the end of the year (as opposed to the original estimate of 15,000). Atari's Paul Welch confirmed that the 1 Mb version of the machine will not be released this year and that it will only be released in small quantities after the New Year. The 'new' Falcon in its re-designed case will hit the mass market in March. It appears that the holdup is due to 'limited manufacturing' and production will not be at full capacity until early Spring. Commodore's new A1200 Amiga has beaten the Falcon to the Christmas market but is also in short supply.

In a shock move, Atari Germany's Managing Director, Alvin Stumpf, has left the company. Countless rumours are circulating about his departure but no comment has been made by the man himself. It is believed that he left as a result of disagreements with the company over re-structuring plans for their European operations. Under the new cost cutting proposals (see ST Applications 24), Atari are to concentrate their resources in the UK, Germany and France and adopt a more co-ordinated approach to marketing and new product launches between the US and European divisions.

Atari UK are to spend £1.5 million between now and the end of the year, most of which will go on TV advertising, promoting the Lynx. They claim to have sold 200,000 units in the UK this year alone, with a total of 325,000 unit sales since launch. They are hoping to up this figure to 500,000 by the end of the year. Atari claim that the Lynx's installed user base is currently about 50,000 units above that of Sega's Game Gear, the main competition.

Sound and Vision Sequencer Released

The latest release from Microdeal is a single cartridge which can sample both sound and video images and put them together in a 'mini-film'. The software and hardware were developed by Dave Woodhouse and Tony Racine of Audio Visual Research (previously known as 2-Bit Systems), creators of the Replay series of sound samplers. The new product is called Videomaster and runs on any ST or Falcon with at least 1MB of memory and a double-sided drive. It can accept video input from a video recorder, video camera or camcorder and can sample sound 'live' or from disk (using samples which have been created using other sound samplers). Video pictures are digitised in 16 levels of grey (or 16 colours) for animated sequences but can use up to 512 colours for still shots, which are saved out in Spectrum 512 format. The Falcon will support the same features but with the addition that it can use 4096 colours in 'True Colour' mode. The same cartridge works on the ST, STE and Falcon. Videomaster is available now and costs £69.95. The product will receive a full review in a future edition of *ST Applications*.

HiSoft News

Devpac 3 is now available from HiSoft. This latest version uses a multi-window editor and is fully compatible with Multi-TOS and runs in all ST, TT and Falcon resolutions. It supports the full range of 68000 processors, from the 68000 itself up to the 68040 (as will be fitted in a more upmarket version of the Falcon, due for release in Autumn 1993). The editor uses submenus and pop up menus as well as bookmarks, mouse block marking and a high degree of user configurability. Those wishing to use their own editor in place of the built in one may do so, although the integration aspect of the package will be lost. The assembler itself is at least 40% faster than Devpac 2, handling around 80,000 lines per minute on a 520ST. As well as executable programs and source listings, Devpac 3 can output linkable object code in DRI, GST and Lattice formats and can include debugging information in the source code. The debugger allows as many views of your source code as are required and it fully supports the 68030 processor and floating point chips. Devpac 3 comes with a 350 page manual and costs £79.95. You can upgrade from Devpac 1 or Devpac 2 by sending back your master disk(s) along with £49.95 or £39.95 respectively.

Wordflair 2 has just been released by HiSoft. It features full support for FSM GDOS and is the first product to come bundled with the long awaited GDOS replacement. It includes both a spell checker and thesaurus as well as a hyphenation dictionary. Graphic handling has been improved with the ability to preserve aspect ratio, hide graphics for faster display and find graphics on disk. The database and region setups have also been improved and expanded. Wordflair 2 requires at least 1 Megabyte of memory (4Mb if you are using an Atari laser printer) and costs £99.95. You can upgrade from Wordflair 1 by sending back your master disk(s) along with the upgrade fee of £39.95.

Diamond Edge is a powerful utility for disks drives, both floppy and hard. It is capable of defragmenting files to speed up disk access times and can repair both damaged files and directory structures as well as mapping out bad sectors. It also checks data with CRC and checksum validations. Diamond Edge is available now and costs £39.95.

Last but not least in the HiSoft Line up is XBoot 3. It is a powerful boot up configuration editor, similar in many ways to Superboot. XBoot allows you to specify which Auto folder programs, ACCs and CPXs will be loaded for your current session. It allows you to change the order in which your Auto folder programs will be executed, and often-used settings can be saved as configuration files and re-loaded at any time; installation of the DESKTOP.INF or ASSIGN.SYS file of your choice is possible and you can auto start any GEM program under any version of TOS. XBoot 3 costs £34.95.

For further details of these and other HiSoft products contact:

HiSoft, The Old School, Greenfield, Bedford MK45 5DE; Tel: (0525) 718181; Fax: (0525) 713716.

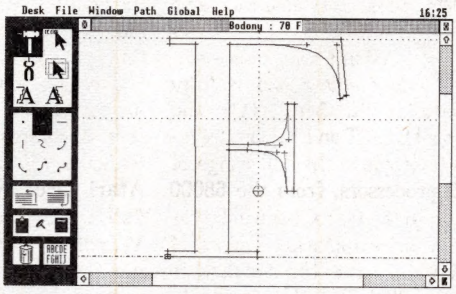
Inkjet Refills

Phoenix Services are able to offer refill kits for the following inkjet printers: HP DeskJet, DeskJet Plus, DeskJet 500/c, DeskWriter, HP PaintJet, HP FAX-300, Canon BJ10e/ex, Star SJ48 and Apple StyleWriter. They can supply both black and coloured refill kits and allow you to mix your orders rather than buy packs all containing the same colour. A cartridge cleaning and refilling service is also available. A number of disks containing PD and Shareware utility programs as well as pictures for you to print out, are also available. The costs for the Deskjet, Canon BJ10/20, Star SJ48, Olivetti JP150/350, Brother and StyleWriter are as follows:- twin pack black £12.95, twin pack colour (includes cleaning fluid and a choice of colours) £12.95, full colour kit (contains cyan, magneta, yellow, black and cleaning fluid) £24.00. The HP PaintJet comes in a twin pack (any colour) for £12.95 or a combination of cyan, magneta, yellow and black for £24.00. Bulk refills and refills for other inkjet printers are also available. Contact Phoenix Services, 104 Skipton Road, Ilkley, West Yorkshire LS29 9HE.

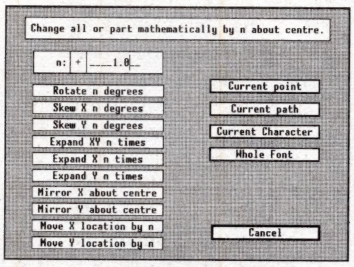
Fonty

Calamus Font Editor

This is a fully featured editing program for creating and editing Calamus CFN-format font files. Also, when used in conjunction with C-Font or Fontkit Plus, CFN files created with Fonty can be used to generate sets of bit-mapped fonts for use in packages such as: K-Spread4, Degas Elite, Timeworks DTP, Calligrapher, That's Write, Redacteur 3, and Wordflair.



Fonty features include: draw mode icons (Hammer mode, Pliers mode, Move mode, Select path mode, left and right kern mode), Grids and Guide Lines, Manual and Automatic kerning, Backgrounds for tracing (a Degas picture or a complete GEM font), a full feature Calculator to mathamatically manipulate fonts, and Window scaling. A separate program, PFB2CFN, reads a Postscript Type 1 Font file and copies it into a Calamus CFN font file.



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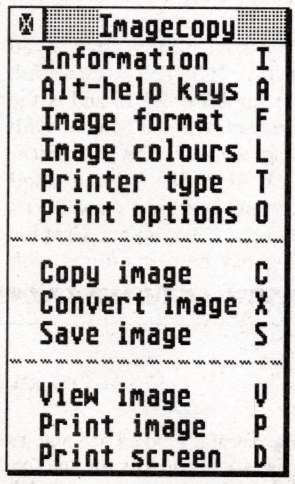
Imagecopy

- Copy images from screen and save them in IMG, Degas or RSC format. Images may be copied by pressing Alternate-Help, allowing you to capture images when the Accessory menu is not available.
- Flexible rubber-banding system which allows images to be selected with a fine degree of accuracy.
- Copies images from both standard and large screens (including virtual large screens such as MonSTer) in any of the normal ST/TT resolutions except TT low resolution.
- Convert images to different formats. Imagecopy reads images in IMG, Degas, NEOchrome, Art Director, and Tiny format, and writes images in IMG or Degas format.
- View images on a monochrome or colour monitor (colour images are dithered on monochrome screens). Up to four images may be displayed simultaneously.

Imagecopy is supplied as a desk accessory and as a stand-alone program. A fully illustrated manual is included.



- Print images and screen dumps in a variety of resolutions on a range of different printers, including: 9-pin or 24-pin Epson-compatible dot-matrix printers, Bubblejet printers, and Deskjet and Laserjet printers. Print speed is much faster than normal GDOS output.

Coming soon: Imagecopy Colour

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£9.95

AIM

Atari Interface Magazine

We are now the UK distributors for Unicorns Atari Interface magazine. This is now one of the two major magazines for ST users in the USA and Canada. As well as plenty of reviews and articles, Atari Interface carries a wide range of advertisements for ST software that is published only in the USA. The Fall issue with cover disk - as detailed below - is available now, future issues will be available as they are published. Price for magazine plus disk of the month: £3.95

Features

Right On Target - Dave Plotkin looks at Dave Small's past and present efforts in the Atari market.

Brace Atarifest Report - The "Lost Boys" of MGAUG show us just how dangerous (and humorous) a trip to an Atari show can be!

Atari Kid's Users' Group - an innovative way in which the PACS users group is serving their members.

TT Lust! - Yves Pelletier shares his views on the TT.

Atari Stockholders' Meeting - John Pilge delivers his synopsis of the shareholder meeting.

The State of Atari - discussion of Atari's latest financial figures, restructuring and the Forbes article.

Atari, Science Fiction, and Cable TV - interview with Mike Kelley of SFAN reveals what this cable TV channel offers and how Atari fits into the picture.

MIDI in the Midst - update on MIDI-related items seen at the Chicago Atarifest.

ST Connection

Warp 9 - the latest software accelerator and configuration ACC from the CodeHeads.

TOS Extension Card - the Mega ST Bus Bridge version of the TEC board from CodeHead Technololgies.

Cooling Fan - how to add a cooling fan inside the STe.

STraight FAX - the latest send and receive FAX software from Joppa.

Home Accounts 2 - new version of an excellent home accounting package from Digita.

8-Bit and Port Connections

Why You Should Keep Your 8-Bit Atari.

PABQWK - shareware online mail reader.

1020 Printer - how to fix problems with this printer/plotter.

Goofy Guru - a use for DOS 3!

Keeping it Organized with the Portfolio - a discussion of To Do lists.

AIM Cover Disk

24_BITS - picture viewer that displays 29,791 colors on an STE or 3,375 colors on an STf with no hardware modification! Supports RAW (CrackArt), RAM or IBM 24-bit Targa file formats.

Cops 'n' Robbers - 2-player low rez arcade game in which one player (in the police car) tries to catch the other (in the getaway car) to prove that crime doesn't pay.

Icon Juggler 1.2 allows you to create your own customized DESKICON.RSC files for TOS 2.06 and above. Reads NeoDesk and DC Desktop icon files.

PAULA 2.0D - plays all those great .MOD sound files from the Amiga. Gives you great control over the sound.

PGS2.2 REF - PageStream 2.2 document updating the Quick Reference Card from Soft-Logik to reflect the changes in version 2.2.

ROOTSDEM.APP - A demo version of Family Roots, an excellent genealogy program from the UK. Runs in all ST/TT resolutions.

SEBRA - Monochrome emulator with many features including the ability to switch between screens. Works with everything including Pagestream, Calamus, Retouche Pro, etc.

ST TAR - de/compression utilities to create or uncompress files in the UNIX .TAR format.

TODAY - Today in History for Michtron BBS 3.0. Contains source file and data files for each month.

ZEST KENO - lets you play and analyze hundreds of Keno games in a very short time. Test your favorite numbers and try out custom number combinations. ST monochrome only.

Magazine plus disk: £3.95

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News In Brief

New move to catch the pirates

The European Leisure Software Publishers Association (ELPSA) have agreed a new initiative to beat the software pirates. From now on, a single ELSPA official will have the power to seize all illegal software found to be on sale in a public place in accordance with section 100 of the Copyright Act, rather than each individual software producer having to take its own. This greatly simplifies the procedure and tightens up existing loop-holes. The new initiative will be administered by FAST and will include a clampdown on car boot sales, where the selling of illegal software has escalated recently.

Accompanist updated

Henry Cosh's highly popular Midi sequencer Accompanist has been updated to v2.5. The program contains many new features as well as a number of bug fixes. Accompanist now includes a full on-line manual with tutorial and over 400k of music in Standard Midi File Format. New features include the ability to step edit all Midi events, insert and delete blocks, change time signature of existing music, transpose on input, pitch bend, split voice and control Midi clock output. Accompanist v2.5 is available from The ST Club.

Marc heads down under

Former Technical Editor of Atari ST User, Editor of ST World and Editor of STuffed Disk magazine, Marc Young, has recently emigrated to Australia. The latest report from 'Down Under' is that the ST scene is almost dead there, and what software remains is grossly over-priced. A recent report by the Australian Prices Surveillance Authority backs up the latter and recommends the repeal of the import provisions of their Copyright Act 1968 which apply to the import of computer software and manuals.

Let's Spell

Richard Dunn, author of the Let's Spell series and Magic Storybook has taken back the copyright on the above products and released two variants of these as Shareware. Although Magic Story Book was sold out in the first few months of release after favourable reviews in the computer press, a number of software distributors failed to pay for the stock they sold on to the shops. This resulted in Softstuff no longer being in a position to market the product, hence Richard's decision to re-release it as Shareware. Mini Magic Storybook is a fully functional, near complete version of the original. Registered users get a new version which goes far beyond the original commercial release. Let's Spell 1st 500 Words is bigger than all six of the original Let's Spell programs put together. It is infinitely expandable and can be personally customised. Let's Spell 1st 500 Intro (the Shareware version) is an 80 word bi-lingual (English/French) spelling game which is upgradable on registration to the full 500 word bi-lingual program. Both Mini Magic Storybook and Let's Spell 1st 500 are available from The ST Club.

The Shows Must Go On!

The first of next year's computer shows have been announced recently. The Ideal Electronic Games Show is a new four day event held alongside the Daily Mail's Ideal Homes Exhibition. An estimated 40,000 games players are expected to attend along with the usual 120,000 vistors to the Ideal Homes Exhibition itself. The Ideal Computer Games Show runs at Earls Court, London from 25th to 28th March 1993.

The Blenheim Group have purchased the rights to the Computer Shopper Show from Dennis Publishing. The company have organised the show for Dennis over the past two years but now have total control over the event. The Computer Shopper Show runs twice a year and has a total attendance of over 75,000. Computer Shopper magazine will remain the primary sponsor of the event.

The 7th International Computer Show is to be held at Wembley Exhibition Centre from 19th to 21st February 1993. Atari UK will have a stand at the event and 170 other exhibitors have already booked stand space. Around 35,000 visitors are expected to attend. The show will be sponsored by the Europress Group (publishers of Atari ST User) and will be heavily publicised in their fourteen titles.

SWSL Saga Is Finally Over

Over the past few months, ST Applications have been closely following the aftermath of the seizure of over thirty PD disks from the South West Software Library by Dorset Trading Standards Officers. I am glad to say that the whole fiasco has now been resolved. Dorset Trading Standards claimed that SWSL had committed offences under the Copyright Designs and Patents Act in respect 13 of the disks seized. Martyn Dryden was given the choice of admitting the offences and receiving a caution or hiring a lawyer to defend himself in court. Regardless of the rights or wrongs of the case, it would have been sheer folly to contest the charges when Dorset Trading Standards were willing to drop them on admission of guilt. Despite strong misgivings, Martyn pleaded guilty to the charges and all action has been dropped.

The case put forward by Dorset Trading Standards was that there is no difference between a sampled sound demo and an illegal bootleg cassette. Any legal arguments would have been based on this point and no other. The case has been examined in detail by ST Applications over the months and so I shall not repeat any of what has already been said. Martyn and his wife are glad to able to put this episode behind them and get on with the rest of their lives. May I end this subject on a somewhat humorous note? Throughout the interviews, Officer Sollies of the Dorset Trading Standards Office demonstrated his deep understanding of the issues involved by referring to the seized articles as tapes!

Licenceware Rip-off

For many years Budgie UK have been associated with high quality low cost software for the Atari ST. This has been made possible by their close association with both authors and the PD libraries who distribute their titles. The licenceware idea came about as a result of an initiative by Paul Glover of the ST Club in an attempt to give something back to the authors for all their hard work. Each licenced distributor keeps records of how many Budgie titles are sold by them and pays royalties at the rate of 50p for each title sold. The fees are collected by Budgie on a quarterly basis and the total amount raised is split between the participating authors (on a pro rata basis depending on how many titles an author has written) with Budgie themselves (a non-profit making organisation) taking none of the proceeds. The system has worked well for many years, relying on the honesty of the PD libraries and there have only been a handful of 'chancers' who failed to pay their dues and had their licences withdrawn.

As a result of non payment of royalties for the quarter ended 31/8/92, no less than eight firms including Public Dominator, Paradise Computers, Choice Software, Trust PD, Micro Choice, ST Adventurers PDL, Compute In Style and EAPD have had their licences withdrawn. One or two other well known libraries lost their licences because of continued reluctance to forward royalties. Most of the above libraries have actually stopped advertising now and have defaulted on only one quarter. All have been informed that they are no longer authorised to sell Budgie UK disks.

To add insult to injury, Public Dominator, at one time reputed to be Britain's biggest supplier of PD and Shareware, with an average sales figure of 800 Budgie titles per quarter, has paid no royalties to Budgie for the past two quarters. ST Adventurers PDL and Compute In Style bounced their cheques for the previous quarter. I know there's a recession on, but nothing excuses defaulting on royalty payments to authors, who after all create the products that these firms make their living from. The number of Budgie distributors in the UK has been cut to sixteen and anyone with details of the above defaulters continuing to sell Budgie disks should contact Carny Maertens, Budgie UK, 5 Minster Close, Rayleigh, Essex SS6 8SF.

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Digita DGBase	£39.95
Prodata	£59.95
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Calamus v1.09n	£129.00
Calamus SL	£575.00
Timeworks DTP v2	£89.95
EZ Text Plus	£19.95
EZ Text Professional	£39.95

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K-Spread 3	£69.95
Digicalc	£29.95
Logistix v1.2	£69.95

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Megapaint II Professional v4	£199.00
Easy Draw 2	£39.95
Supercharged Easy Draw 2	£59.95
Cyber Studio (CAD 3D v2)	£39.95
Cyber Control	£32.95
Cyber Paint v2	£39.95
Spectrum 512	£24.90
Technobox Drafter v2	£179.95

COMPUTERS/MONITORS/PRINTERS

520STE Start Pack	£249.00
520STE upgraded 1Mb	£259.00
520STE upgraded 2Mb	£285.00
520STE upgraded 4Mb	£359.00
1040STE Family Curriculum II	£299.00
1040STE Music Pack Incl Pro 24	£299.00
Mega STEs	*From* £399.00
TT030	*From* £890.00
Falcon 030 1MB	PHONE
Falcon 030 4Mb 65HD	PHONE
SM124 Mono Monitor	£129.00
Atari SC1435 Colour	£209.00
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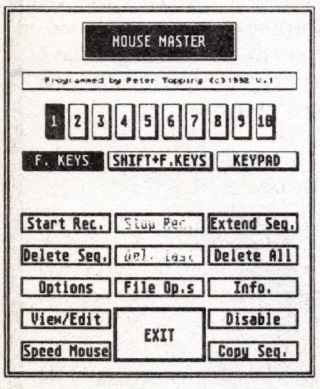
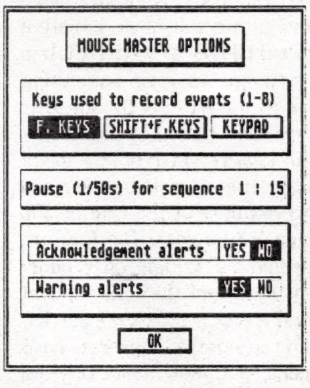
Mouse Master





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Mouse Master can be used with any program which uses the mouse, though most of the package's facilities are available from a Desk Accessory, so it is best used with GEM based programs or the desktop.

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NB Fontkit Plus 3 and Fontswitch 3 are no longer available.

Anyone who has lost some data knows the importance of keeping a regular backup and how tedious and time consuming this can be. There are several programs, commercial and public domain, designed to help you make the backup process as efficient as can be.

Diamond Back II

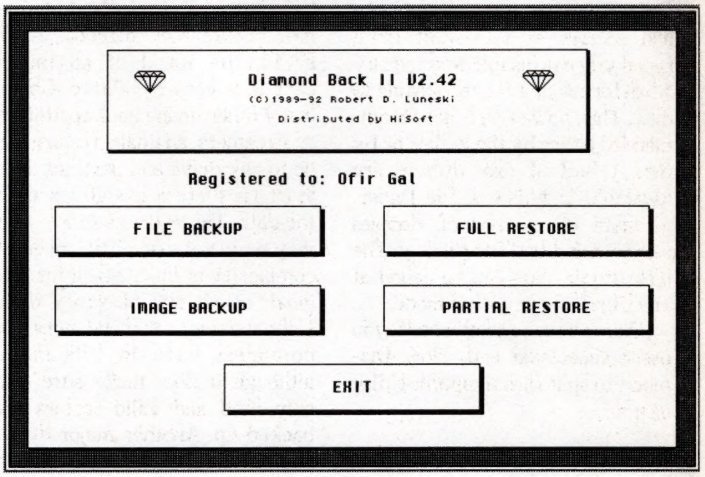
Reviewed by Ofir Gal

There are quite a few methods of backing up a hard drive - the simplest and slowest way is to simply copy the files, one by one, to disk. However automated this system could be made, using the 'file at a time' method means that the floppy head has to travel back and forth, writing a file, updating the directory and FAT and back to the next file. A more efficient way is used by programs like Turtle which is to create an image of the floppy disk in memory and write the files to it. When the RAM disk is filled it is copied to the floppy sector by sector. This method requires 720k of RAM. A slightly improved version is to only keep the directory and FAT in RAM, writing the files to the floppy and only writing the directory at the very end. The fastest method is to stream the data, each byte on the hard disk is simply copied to a floppy. The problem with this method is that the floppy disks cannot be read directly and so a full restore to an identical partition is required. This method is used by Fast Copy Pro. Diamond Back II uses a combination of the last two methods and data compression and claims to be the fastest yet hard to floppy disk backup program.

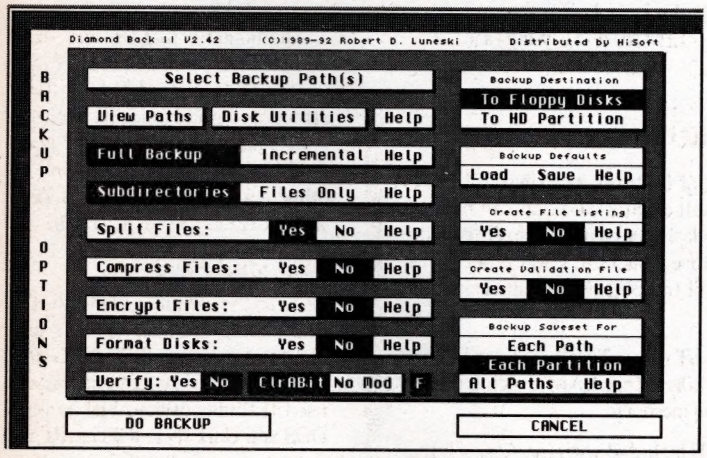
The Package

Like all HiSoft products, Diamond Back II comes in an A5 sized glossy box containing a 48-page manual and a single disk. Diamond must be installed before you can use it. The installation program requires you to type in your name and address and provides a simple form of copy protection. This way you can make as many back up copies as you like - each will display your name on the start-up screen of Diamond. Three more free programs are on the disk - Cold Hard Cache V4.0, DFormat and DFind.

The main screen of Diamond Back II displays the four main options - File Backup, Image Backup, Full Restore and Partial Restore. Clicking on one of these buttons takes you to the next screen.



△ When Diamond Back starts it presents you with the four main options. Selecting one of these takes you to the corresponding dialogue box.



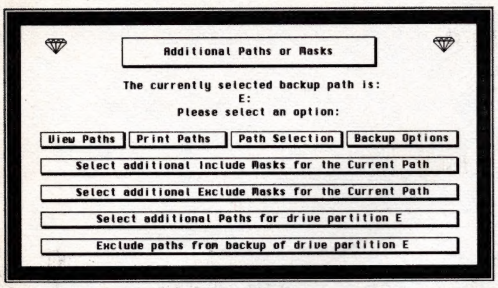
△ The file backup options. Here you can decide whether Diamond will do a full or incremental backup, format floppies, validate files, clear the archive bit, etc. Pre-defined configurations can be saved to and loaded from disk.

File Backup

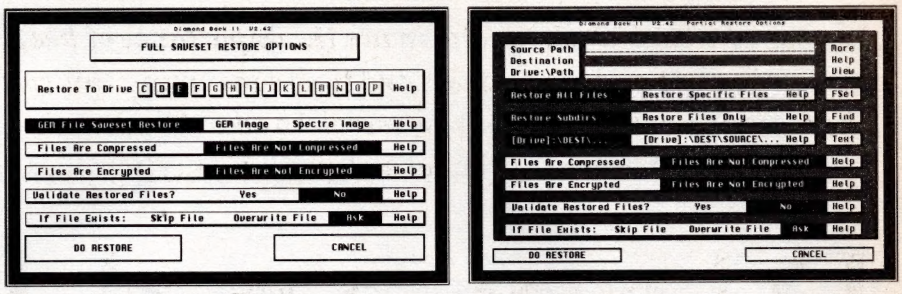
The file backup box displays and enables you to select various backup options. The first action would normally be to select the paths to backup which takes you immediately to a different set of dialogue boxes where whole partitions and paths to include and exclude can be selected. Extensive use of DOS and Unix style wild cards is allowed, enabling you to precisely determine which files are to be backed up.

When the paths are selected you return to the backup box. You can select to compress the files, encrypt them with a password, create a file list text file, create a checksum or CRC validation file for extra verification before writing to disk. You can also choose to backup to another partition or even a different hard drive. Backup settings can be saved to disk enabling you to create a different configuration for each partition if you want.

Diamond Back II uses the archive bit or date for incremental copies whereby only files that have been modified since the last backup are included in the backup. This enables you to do a full backup once a month or so, then do an incremental backup every day. Additionally, you can choose to format the floppies. The formatting options are quite extensive and include a special super fast format that is even 20% faster than Fast Copy and almost twice as fast as the desktop. The speed is achieved by a variation of the Twister format but can only be used in 80 tracks, 9 sectors configuration. Future versions of Diamond will support more sectors



△ Diamond enables you to make extensive use of include and exclude masks, utilising DOS and Unix-style wild cards.



△ If you ever need to restore data, you can select between a full and a partial restore. A host of options is available, including the ability to call the file finder utility which helps you locate the files to be recovered.

and tracks. If you want more capacity you can revert to the twisted format and more tracks and sectors. If you want more speed you can disable write verify when formatting and/or writing to disk. This, however, is not recommended either by the author or by me. A host of disk utilities are available including a file finder, estimate of number of floppies required and text file reading. The disk utilities box can be called at any time from any other mode.

The manual recommends you use compression and allow Diamond to split files to optimise disk usage.

File Restore

The files Diamond writes to floppy are standard GEMDOS files and can be directly read from the floppy. If you used compression on the backup or enabled split files, you will need to use Diamond to restore them first. In any case, the options and restore facilities Diamond offers make a full or partial restore a simple affair. Diamond Back offers you a wide choice of restore options from a full restore to a single file restore using wild cards, all in a similar manner to the backup option. Destination paths can be specified so that a restore does not necessarily end up on the partition it originates from. You can choose to restore a specific file or use wild cards in a variety of ways. A comprehensive file find facility is provided to help you locate files to restore, but more on this later.

Image Backup

In addition to the file backup options, image backup is also possible. Image backup has several advantages and limitations. Data on the hard disk is copied sector by sector to a floppy and so it is not possible to use exclude paths and wild cards nor can you use the archive bit to perform a more selective backup. However, because of its simplicity and the fact that no files need to be created, no complex directories or FATs, the speed of an image backup is very attractive. Unlike many other image backup utilities or streamers, an image restore can be to any drive and partition size, as long as there is enough space for the data. This is not as simple as it may seem because of the inherent complexity of maintaining the original format and directory data. Unfortunately Diamond does not compress data in this mode although it does make sure that only used and valid sectors are backed up. Another major drawback of any image backup system is the inability to restore single files, you can only do a full restore.

Users of the Spectre GCR Mac emulator can use the image backup mode to directly backup and restore their Mac partitions. As with all other modes you have the option to format and enable or disable write verify.

Documentation

A 48-page manual, spring-bound and well laid out, accompanies Diamond Back II. It did not however give answers to all questions that arose as I tried to get to grips with Diamond. It does cover most aspects of disk backup but leaves you wondering whether you should clear disks before you use them, or will Diamond do it for you, and managed to confuse me with regards to paths when using the partial restore options. Nevertheless it is better than most manuals I have seen. I guess I just got used to expecting better documentation from HiSoft.

In Use

It was only when I started using Diamond Back that I realised why the manual was a little confusing. The program suffers from a confused layout which instead of using menus takes you through an array of dialogue boxes. I am still unsure which dialogue is going to pop up next. When you do get used to this user interface, Diamond becomes more friendly and easier to use.

After a little experimentation, file backup was my choice and it is the fastest I have seen so far. Compression is very effective and reduces the number of floppies required to about a half. The compression method is a variation on the Lemple-Ziv method as used in LHARC and is very fast.

Incremental backup using the archive bit is very useful - I use my ST daily, writing articles, programming or composing MIDI music and the incremental backup still does not take more than a few minutes, sometimes even less than a minute. I have also tried to restore data back to the hard drive and this proved to be even faster than a backup.

When backup is in progress you are presented with useful statistics about free space left on the current floppy, backup options selected, name and size of files before and after compression and more. A fuel gauge is used to indicate the progress of the backup.

Diamond Format

The formatting options of Diamond are also supplied as a separate self detecting DA/PRG. It offers standard and twister formatting at 9 or 10 sectors per track, 80 or 82 tracks, single or double sided, double or high density. In addition, a Diamond Super Fast option is available which claims to be faster than any other method. This format, however, is limited to 80/9 for double density drives or 80/18 for high density disks.

Diamond Format will also write an MS-DOS compatible boot sector to pre-formatted disks without affecting data previously written. It also offers an AFE (Mac) compatible format option as well as other enhancements such as Zero which deletes all files in a flash.

Diamond Find

As with the format options, the file find part of Diamond is also supplied as a separate ACC/PRG. It is a simple, yet very fast and easy to use file finder utility. You can use DOS and Unix style wild cards and output the results of a search to screen or to a file.

Cold Hard Cache 4

This is the latest version of the disk

Alternatives

Vault - PD program with a host of features including full use of wild cards and the archive bit. Vault creates files that can be read directly from the floppies and is relatively easy to use. A separate program called Key is used to restore a backup. Vault is not as fast nor as stable as Diamond but is still the best non-commercial program of its kind.

Turtle - Still popular with many ST users, Turtle is not as flexible as Vault. Turtle requires at least 720k of free RAM which it uses to create an image of the floppy disk in memory.

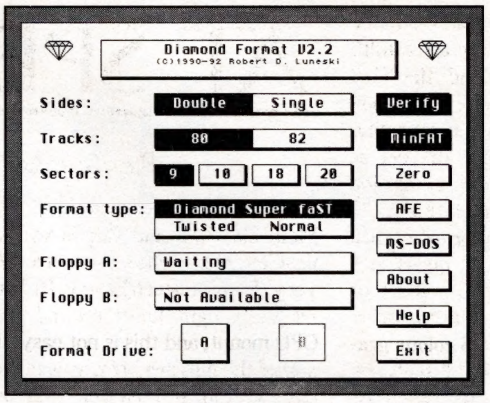
Atari Archive - This program is included with the Atari "Introduction to Programming" package. It offers a rather limited use of wild cards and data compression but is quite slow when compared to Vault or Diamond Back.

cache program reviewed in ST Applications #10. This is a shareware product by a different author - Robert E. Owens III - and is unique in that it also caches floppies. The program works by storing directories and data in a user defined RAM buffer. It only caches on reads but does improve disk writes as well by comparing the data to be written with data in the buffer - if a sector has not changed it will not be written to disk. The cache is accompanied with a desk accessory that provides control and performance statistics. It is very stable and much better than other cache programs I have tried and depending on use can save over 50% of disk access time, very useful when using Diamond Back.

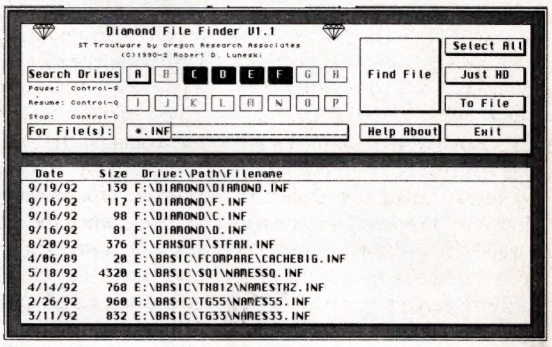
Conclusion

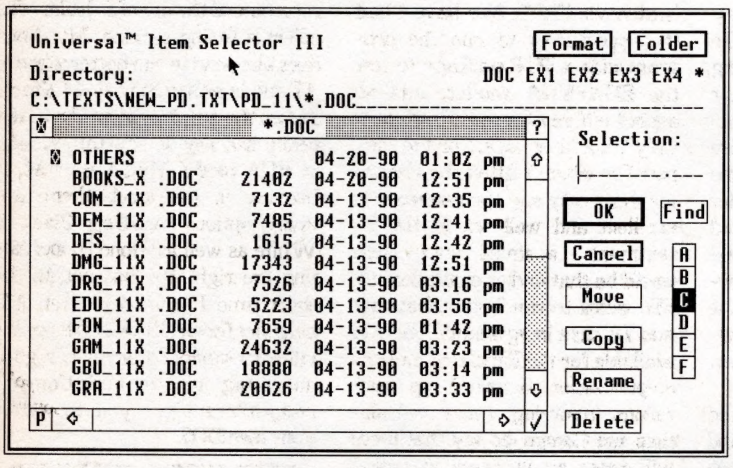
Like all HiSoft products, Diamond Back has a sense of quality about it. It is stable, reliable and efficient and above all - it does the job. When compared to other similar programs it wins in most respects. It is faster than Turtle and Vault and offers data compression which the other two do not. The utilities that accompany it are first class and enhance its performance even further. Where Diamond Back fails is in its confusing user interface and less than perfect manual. I would personally like to see Diamond Back III with a menu driven interface instead of some of the dialogue boxes. Even so Diamond Back is the best backup utility I have come across when it comes to speed, disk usage and reliability.

Product:..... Diamond Back II
Supplier:.....HiSoft
The Old School
Greenfield
Bedford
MK45 5BR
Tel:.....0525-71 81 81
Price:.....£39.95



The format (△) and file finder (▽) facilities are also available as stand-alone programs called DFormat and DFind respectively.





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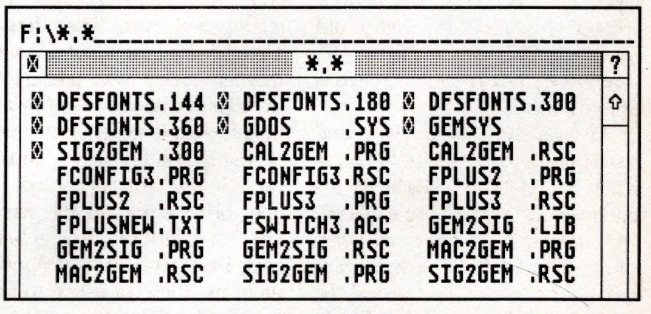

£14.95 from the ST Club

AT SPEED C16

Review by Dave Cowling

AT Speed is an Emulator utilising an 80286 CPU, and the C16 version runs at 16Mhz. Emulation extends not only to the operating system but to screen drivers as well - with a medium resolution monitor you will emulate a CGA Graphics Card giving a screen resolution of 320x200 pixels in 4 colours, 640x200 in 2 colours or text mode of 16 colours, or in TANDY mode with 16 colour graphics. With the SM124 high res. monitor, the whole world opens up with Emulation from CGA, Hercules, Hyper Hercules, EGA Mono and VGA Mono.

AT Speed is a board on which is mounted an 80286 microprocessor running at 16 Mhz, a mount for an optional 80C287 maths coprocessor, a system disk to switch on AT Speed and two disks containing the very highly rated DR DOS. (All PC's require an operating system to be installed on boot up and DR DOS is an excellent program.) The board is soldered piggy back to the 68000 chip on the Atari models which use the 80x25mm Motorola chip and these include the STFM and ST's. The newer STe's utilise an adaptor board (extra) which plugs directly into the 1"x1" square 68000 chips, eliminating the need for soldering and theoretically making the installation much easier. If you are the proud owner of a Mega, a speed bridge is available which again eliminates the use of the soldering iron in your beloved machine.

When installed, a very short program switches on the 80286 and turns off the 68000 and your machine not only *thinks* it's a PC, it *is* a PC, a full-blown 80286 running at 16Mhz and prompting you to insert the DOS Disk, albeit in German. The illusion is also very real: you insert the dBase 3+ disk, load up the files saved from college and not only does the program perform exactly the same as the networked Nimbus's, it runs faster and the Atari SM124 screen is streets ahead of the dusty old equipment College has to offer. OK - the theory is fine, what happens in the real world?

My machine is an STe and therefore to use AT Speed I had to adopt the Adaptor Board as the interface to the Motorola 68000. My machine is also inside the warranty period, and so *extreme* care had to be taken at all stages of the operation. In theory, all I had to do was plug AT Speed into the Adapter board then connect the Adapter board 'piggy back' onto the 68000 Motorola chip, and this is where problem one starts. There are 64 very fine pins which have to fit into 64 very tight holes around the CPU mount, and this is not easy. If any of the pins are bent, as was the case with mine, then you have an extremely delicate job of positioning the board above the CPU, and when you are confident that all is correct it is one heck of a job to push home the pins into the receiving mount. However, as I mentioned earlier, the instructions call for mounting the AT Speed board onto the Adapter and this is just not possible. I found connection had to be made when the Adapter was in place. It is imperative for reliable operation that all connections are complete and all pins are pushed fully home, and so a small pair of pliers had to be used to ensure AT Speed was completely mated.

As there are many versions of the ST it is not possible to offer a complete review of fitting and my comments are relative to my STe with the 1.62 TOS. As far as fitting on this set-up was concerned, after the difficulties encountered mounting the boards, my troubles were not yet over as the fitting of the board does mean that space under the keyboard is very tight and refitting the Atari case is something of a delicate operation. However, all is now installed, the machine is booted up and the switcher program run, and my new IBM AT clone - doesn't work!

I think a company can be rated by the quality of the product and also by backup provided when problems occur and in my case the problems were many, owing in part to installation with a few bent pins, two of which had failed to enter the receiving holes in the mount, and even when this was sorted it was found that a degree of incompatibility was present with the STe. But now, with a few minor modifications, the emulator works perfectly. As far as the distributors Compo are concerned I can only offer praise to all, particularly to Neal O'nions who helped, rang back when he promised and gave me the confidence to persevere and resolve the problems in hand - 10 out of 10 for Compo. The problem area in my case was the Adapter board and Compo are currently looking at alternative designs which will make mounting easier and much more reliable. I should be able to report any improvements shortly as Neal has promised to send one for evaluation and to replace my still dodgy Adapter.

So how do I rate the AT Speed C16 Emulator? Well, if you are looking solely for an industry standard machine then buy an AT clone with EGA or VGA resolution and look no further. However, if you like your Atari but need to process your work at home, then AT Speed C16 is an ideal companion, handling databases, spreadsheets, word processors, etc., just as the office or college machines do. Screen emulation is important for games or "Windows" applications and although I have not tried Microsoft Windows, I understand the program works well under emulation (watch out GEM). Nor have I had the opportunity to run the program with a DTP package to test the EGA/VGA modes, and so again I will reserve comments possibly till a later date. For the purpose for which I fitted the Emulator, I can only say the hardware is excellent and well worth the investment - a small reservation would be that under emulation my STe seems to run hotter, but that may be pure imagination. There is available for the Emulator a maths co-processor to speed up operations involving many calculations and Compo do say that these will cause an increase in power consumption. I cannot comment as yet but would certainly look forward to an opportunity to try one in the near future, and if I get one I will report back.

Operation in either Atari or AT mode is simple. By default, your machine is an Atari, but by booting up with the disk supplied and configured to your requirements, your machine becomes an AT. To switch back just press Control/Alternate/Insert and the GEM desktop appears. If you choose, you can have the AT setup program as an accessory and switching both ways is instant. Screen mode switching is just as simple although only relevant in graphics mode; to change from CGA (320x200) to Olivetti (640x400) from DOS you just run vidmod/oli (supplied with the AT Speed installation Disk) and the screen emulation is altered. There is one restriction to screen switching: it is not possible to enter VGA or EGA mode when the program has been set up in a lower resolution as these modes require more memory, and so by default I always start in EGA and from there can move to any resolution should I so desire. Sounds complicated? Well yes, it is, unless you have a regular daily diet of IBM machines. However, to help you on your way the AT Speed manual is 68 pages long and I found progress through these pages quite easy, although one or two points were skimped and the section on DR DOS 5 only amounts to 20 pages. To supplement this I found the purchase of a book was not only useful but, to get the most out of my new machine, almost vital.

Now for the grumbles: call me picky if you wish but things computer are never cheap and when you pay out lots of crisp fivers, anything short of perfection should not be accepted. Installation to my STe was not easy and I would recommend the use of a dealer who offers a fitting service. My Atari does also tend to run hotter when in AT mode although to no ill effects and on the graphics front I have not really had any satisfactory results in VGA mode. This, I am told, is because in this mode there are many options including Black & White as well as Mono (!) and hitting the right one has not, in the short time I have driven an AT, been my forte. DR DOS 5 is not the industry standard but it is a good operating system and Compo's competitors leave you to source your own DOS.

Product:.....AT Speed
Supplier:.....Compo Software
7 Vinegar Hill
Alconbury Weston
Hunts. PE17 5JA
Tel:.....0480 891271
Fax:.....0480 890787

STOP PRESS. Just received from Compo, a replacement adapter board with all STe mods fitted - still a pig to fit but runs cooler and with none of the incompatibility problems of the Mk 1 board. I am also informed that the co-processor will not physically fit inside the STe, and so to use it you must run your STe from a Tower System - ah well, that's computing.

Falcon

Predator or Prey?

The Falcon probably represents the last throw of the dice for Atari Corporation. It's hard to see how Atari can haul themselves out of their current situation unless their new machine becomes a whirlwind success. Michael Baxter takes a long, hard look at the Falcon without the help of rose-tinted glasses...

What a difference a few months make: hot on the heels of my article bemoaning the state of the Atari market, with particular reference to the TT, Atari have announced outline specifications of a machine which has the potential to turn the personal computer market on its head.

As documented by Paul Rossiter in issue 21, the Falcon represents the coming together of the best features of the TT computer with radical new technology to offer a system of unsurpassed versatility. Ironically, it may return some credibility to Atari's "Power Without the Price" slogan, and looks set to create the same stir in the market that the ST did way back in 1985. It certainly has the magic ingredient that the Mega STE and TT lacked when they were launched - that of revolutionary new technology.

The Falcon has been attracting more than its fair share of attention, not just from established Atari strongholds, but also anxious glances from the PC and Amiga camps. This is welcome news, and may well herald the return of the Fuji logo to the limelight - if not, where Atari go from here I'm not quite sure: needless to say, I would think more than twice about buying shares in the company. Atari appear to be in a mess - support for the ST seems to be falling apart: fewer computer outlets are stocking the machine; leading entertainment software producers are abandoning the ST in the face of poor sales; even Atari related literature in the newsagents seems to be fading behind the countless PC and Amiga journals. The value of the good old ST as an out-and-out games machine is diminishing rapidly in the face of low price consoles, which, sad as it may seem, offer far better facilities for people who just want to play games. The multi-purpose STE, the machine that was supposedly going to give the ST a new lease of life in the games arena (and the Amiga a run for its money) must now be considered a flop. More than two years after its launch, I can't think of a single title that uses any of the machine's DMA sound, hardware scrolling or extended palette, 'something which will leave a bad taste in the mouths of all those who eagerly upgraded their machines in anticipation of the software which never arrived. This is despite assurances from Atari who claimed to be leading the way with their own STE titles - RSN (C) Atari Corp. At the other end of the market, the TT continues to be as unattractive as ever: overpriced and underpowered, it looks set to fade from the scene with the advent of the cheaper and higher spec Falcon. According to local dealers, the only Atari machine that is selling in any significant numbers is the Mega STE - its current low price and snappy performance make it an ideal small business machine or home based wordprocessing and DTP platform. It's also interesting to note that our largest local Atari centre cites the presentation of the Mega STE to be a major selling point - "Many people have an preconceived image of what a modern computer should look like - the Mega STE styling seems to fit this nicely. People are put off by the old STE case...". This has worrying repercussions for the Falcon, but more on this later.

Among all of this doom and gloom, the Falcon swooping from the skies could be considered manna from heaven - all the glossies have been drooling over the machine since its announcement, and if you were to believe one or two journals, then the Falcon will single handedly destroy Commodore and Acorn, while hacking huge chunks of the market from Apple and IBM. Nice concept, but the reality is a lot more sobering.

Firstly, it has to be said that the Falcon is the most powerful machine Atari have ever produced in their somewhat chequered history. Its design will effectively elevate its performance way above that of the "engine-clamped" TT, and its versatility is something that other manufacturers must be perusing with some anxiety. Then there is the price - Atari intimated prices seemed too good to be true, and swelled the tide of enthusiasm mentioned above. Atari, however, seem masters of snatching defeat from the jaws of victory, and a few pre-release clangers have already set the alarm bells ringing in several Atari circles. Sod's law also dictates that if something can go wrong, then it will - this seems to be manifested in the untimely entrance of Acorn's new £499 32-bit RISC computer, and the new Amiga - shades of 1985 when the Amiga 500 spoiled the ST's party.

Atari's latest mutterings indicates that the Falcon will be supplied in a standard STFM/STE case, will initially ship in two versions - a 1Mb machine with no hard disk for £499 RRP and a £899 4Mb version with a 64Mb 19Ms hard disk, to which you will have to add a VGA monitor, currently around the £220 mark. On face value, Atari appear to have learned from the TT episode, offering true power at a realistic price. By the time these machines hit the streets and third party dealers have knocked a few chunks out of these prices, it is not unreasonable to expect a 4Mb Falcon with hard disk and monitor to ship for under £1000, and the entry 1Mb version for around £400-£450.

Unfortunately, as history has proved, superior hardware is not enough to secure success. In the volatile early eighties, new computer systems were popping up on a monthly basis, many fading out of sight only a few months after their launch - machines like the Oric Atmos, Memorex, Tatung Einstein, Dragon 32, and the MSX - Japan's attempt to establish an IBM-style computing standard - all went down the pan, a fate which can be largely attributed to poor marketing and support rather than the quality of the hardware. Indeed, despite the technological superiority of Atari's 400 and 800 machines over the competing Spectrums and C64's, less than scintillating marketing strategies almost led Atari down the same path as the MSX et al, if it had not been rescued time and time again by it's rich parent company, Warner Communications, and later bailed out by the Tramiels. In simple terms, if a machine is not supported by software developers, then that machine becomes a door stop. This is the problem facing any company entering the computing industry with anything other than a PC compatible computer. For Atari to reap the success that the Falcon hardware deserves, it is going to have to pull off a marketing power-play the like of which has never been seen before in the computing industry...

Price, performance, support and image are going to be all im-

portant: thankfully the specification of the Falcon is good enough to attract attention in its own right. The price is good - if you run a quick cross-machine comparison, by the time it goes on sale, the Falcon 4Mb/64HD will be pitched at around the same price point as a 33Mhz 486 PC with a 80-100Mb Hard disk. PC machines are slaves to backward compatibility, and even the architecture of the latest 486 machines is no match for the Falcon - for the clone makers to raise a 486 to something approaching Falcon spec they will have to add a Soundblaster Pro card and a local bus VGA card - adding between £400-£1000 to the price of your PC, depending on the specification of the cards installed, and even then the machine will lack some of Falcon's more impressive features, not least the 32Mhz DSP chip. Apple computers of similar capabilities are simply unaffordable by us mere mortals, so there's another buying decision you don't have to make - if you lust after Mac software, wait until the new version of Spectre GCR arrives, and plug it into the Falcon - you'll probably be saving yourself a couple of grand into the bargain.

Commodore and Acorn are in the same boat as Atari - both have new, high spec machines in the pipeline, each is attempting to impose its own computing standard by ignoring IBM compatibility. As such, the Falcon must be seen by potential customers as the better investment over these two machines. I don't personally see the Archimedes posing much threat - there just isn't enough quality software for the machine, unless you are looking for educational stuff. The new Amiga is more of a problem - at the time of writing technical and pricing details are unavailable.

A major concern expressed among many computer critics is the styling of the Falcon. The decision to ship the machine in the old STFM case must be considered a howler. Dealer feedback indicates that the STFM/STE does styling does not present the right image when stood alongside the myriad of "three box" PC Clones. The Falcon has a huge potential for expansion - where is all the extra expansion hardware going to go? The current STE machines are notoriously short on internal space when it comes to installing accelerator cards and the like - things will obviously not improve with the new machine, ironically "designed" with expansion in mind - ha ha. I also don't like the idea of shelling out £1000 on a computer and still having to put up with a rats' nest of wires hang out of the back of the machine and across the desk - come on Atari, what are you thinking of? It's no use Sam Tramiel defending the decision by saying the STE case was available and it was cheap and that it cost nothing to develop. That is quite simply false economy, and in any case, what is wrong with the existing Mega STE case? That unit is altogether more suited to the Falcon's image and power, and that is also "available and cheap". I would dearly like to see Atari stick a version for the Falcon into a tower style case - maybe they will do this with the 68040 machine "due in April 1992" - only time will tell. Needless to say, the Falcon needs an external image to do justice to hardware under the bonnet. After all, if you were paying a similar sum of money, would you by a Ferrari Testarossa or a Ford Escort packing a Testarossa engine?

At the end of the day, software support will make or break the Falcon. I hope Atari will support the machine with their own titles from day one - something they never did with the TT or the STE series. Several games companies - notably Ocean and Psygnosis - are working on Falcon-specific titles. The quality of these first titles needs to be top notch to grab the attention and imagination of a brainwashed market which seems to regard Nintendo and Sega consoles as the state of the art in home entertainment. The Falcon has facilities to make even the best PC VGA games look slow and sonically dated - jaw dropping software the likes of which has not been seen outside the best arcades is no longer out of reach. On a related subject, there have been several scare-mongering reports (from Commodore sources, I might add) that the Falcon is not compatible with the ST or TT. This is complete rubbish - all of HiSoft's development and business software runs on the Falcon without any problems, as will any "correctly written ST applications". In keeping with all OS upgrades, there will obviously be some incompatibilities, but nothing so severe as to render complete applications unusable.

True Emulation

Gone will be the days when Atari users have had to put up with emulating obsolete or cut down IBM systems, in particular the ST's inability to emulate any of the now standard PC screen display modes or communicate effectively with external PC peripherals. The super fast colour VGA emulation, SCSI-2/IDE ports, direct processor slot and indeed the 1.44Mb 3.5" floppy drive should now open the door to full 386 (and perhaps 486? Vortex?) emulation - with no compromises. The Falcon could really set the market alight if such an emulator was available at launch time - the combination of undeniably superior hardware matched with fast PC compatibility costing less than a similar PC system would be simply too much for many people to resist. Ironically, it would open the door to the biggest range of business software in the world...

And the Future?

Atari deserve success with the Falcon. They have built on the success of the ST, learned (I hope) from the mistakes with the TT, and put together a package which has the kind of potential and versatility never before seen in the low-cost personal computer arena. One heck of a lot of foresight has been shown in the machine's design - by building in a stereo microphone socket and exceptional sound processing hardware, Atari have effectively created a low cost, exceptional quality digital sampling machine which could put many dedicated samplers out of business. The Falcon's ability to sample (and compress) direct to hard disk without the need for additional hardware just compounds the competition's problems. If nothing else, this will increase Atari's stranglehold on the music market, and surely reduce the Apple and IBM attempt on the MIDI market to no more than a token gesture. The inclusion of N-PEG and J-PEG sockets has effectively opened the door to the next generation of CD Interactive technology, again at a price that the competition will find hard to match. It should certainly sound the death knell for Commodore's already struggling CD-TV device, and PC owners adding up the cost of installing a similar system in their machines will go green with envy.

In short, the Falcon has the capability do everything the competition can, and more besides - only faster, better and, most importantly, far, far cheaper. All it needs now is the marketing and support to do it justice - quite simply, Atari are now masters of their own destiny...

But my PC is faster...

A few unfair judgements have been bandied about in the PC press regarding the Falcon - whether the specification of the Falcon has panicked clone pundits into a sudden frenzy of anti-Atari feeling I don't know, but I have read a lot of very uninformed articles in the past few months. Firstly, let's get one thing straight from the outset - the PC world currently has nothing available at a reasonable price to match the specification of the Falcon: strange when you consider one journal stating that a cheap 386SX running at 25Mhz was faster than a 16Mhz Falcon. To the uninitiated, this may appear true, but reading between the lines reveals a different story. Firstly, the 386SX machine in question utilises a 32-bit CPU which is forced to communicate with the outside world via 16 bits; the Falcon is a full 32-bit micro, thereby needing only one CPU cycle to process a 32-bit instruction - the 386SX requires two cycles, effectively reducing the clock speed for the purposes of this comparison to 12.5Mhz, clearly behind that of a Falcon. Now let's look at a full 32-Bit i486 PC running at 33Mhz. Twice as fast as a Falcon? Not exactly - the 68030 and i80486 are both CISC (Complex Instruction Set Chip) processors, but the 68030 in general requires fewer clock cycles to process similar instructions giving an advantage from the outset. Next, throw the DSP56001 into the equation and things start to swing wildly in favour of the Falcon: the DSP can process instructions at 32Mhz IN PARALLEL, producing the sort of processing throughput that only Intel's forthcoming 50Mhz P5 (or 80586) could emulate, and at hugely increased cost. Add to that the need for a fast Local bus VGA card, and SoundBlaster Pro card (the best the PC world can offer, yet still second to the Falcon's capabilities), and you have a bill that would make even the most die-hard PC owner think twice...

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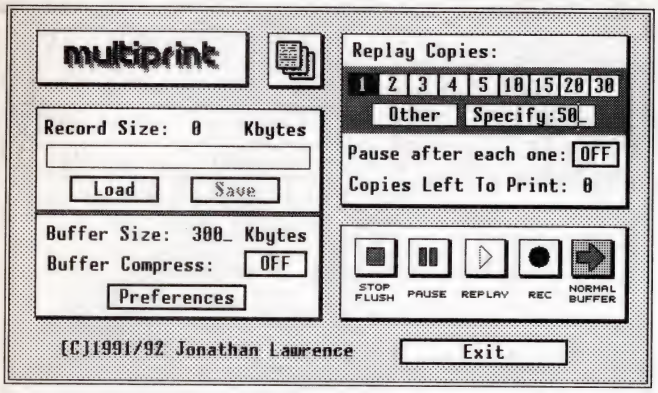

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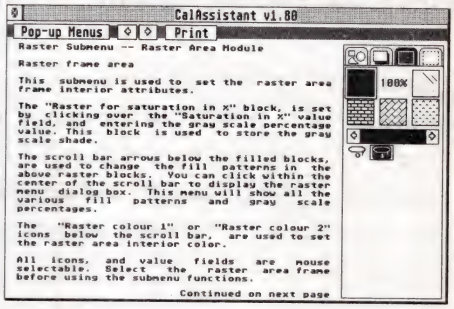

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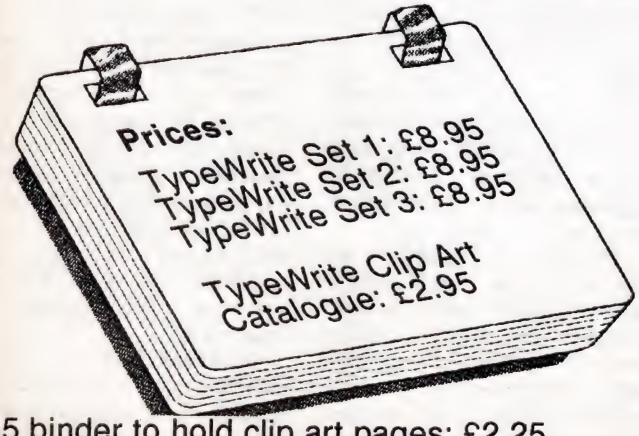

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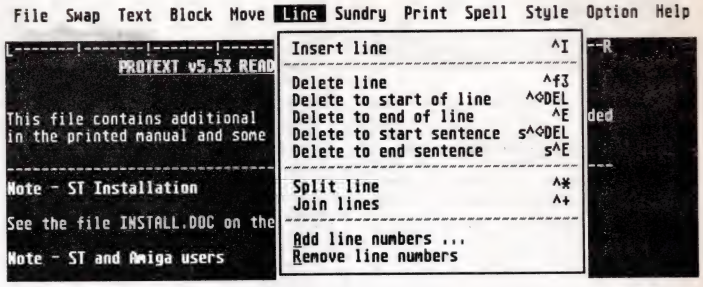


Protext V5.53

A Review by Steve Henderson

Love it or loathe it appears to be the general feeling held by the ST word processing fraternity towards Arnor's Protext. The current incarnation, v5.53, has been resident on my hard disc for the past few months and I've been involved in a love/hate relationship with it from the day I installed it!

Protext is a purely text-based word processor which cannot incorporate graphics in any form. This simple fact had always biased me against Protext despite the fact that I very seldom want to incorporate graphics into documents. The other facet of Protext I disliked (without ever having tried it!) was the appearance of the screens. Its PC origins meant that it did not use drop down menus - it used a Command Line Interpreter (CLI) and it looked like a PC program in use. Most of this changed with the appearance of version 5 and all subsequent versions have offered drop-down menus as a concession to graphical front ends. If you look back to issue 2 of ST Applications you will find a review of version 5 by Piper with some second thoughts by Paul Rossiter. This review of version 5.53 is meant to extend these works by detailing my views on Protext and also to describe the new features which appeared in version 5.5.

The first thing that struck me about Protext was the advertised price of £152.75!! This means that only Signum2! and Word Perfect carry a higher price tag in the word processor market. Fortunately mail order discounting brings the price down to a more respectable £100 or so. Although Protext will run in both high or medium resolution, you must have a minimum of 1MB of memory and the presence of more is helpful. As usual, the presence of a second floppy is helpful (better still a hard drive) and will speed matters up considerably - now how often have we heard that comment?

Protext is supplied as a large boxed set containing four double-sided discs, a collection of documentation and a registration card. The main manual runs to 352 pages but is for version 5. An update manual of 23 pages describes the new features of version 5.5. A 48 page tutorial guide is supplied but is again for version 5 and therefore makes no mention of the new features in version 5.5. All of these works are in A5 format and are spiral bound. Additionally, a pamphlet describing the printer drivers supplied is well worth reading before you progress much further. The final offering is issue one of Exfile, a magazine dedicated to Protext on all platforms. It is full of hints, tips and the solutions to some beginners' problems - all told well worth a read once you have had a few days' experience with Protext. Back to the main manual. First thing to do is to skip the installation sections for the PC, Amiga and Archimedes until you finally arrive at the ST section. This is typical of the manual. It is littered with references to Protext on these machines, particularly the PC, and results in the manual being anything but smooth to read. I appreciate that it makes economic sense to produce one manual for all the different platforms that support Protext, but it does make for a manual which is scrappy to read and does not compare well with the manuals of its competitors. It is poorly laid out, and finding a specific piece of information can be quite a chore if it is not specifically mentioned in the index. Installation onto either floppies or a hard drive is quick and very straightforward even for a novice. Running the program from floppy takes about 45 seconds. As is my wont, as soon as I had installed the program onto my hard drive I had to run it for a quick look before reading the next part of the manual. This was where I got my first shock - where were the drop down menus? The opening screen displays a status line at the top but of a menu bar there was no sign! The status bar displays information relating to the current document including name, size, etc., and also a digital clock which updates every two seconds. For this to be of any use at all you must have set the ST clock to the correct time. Back to the manual and I found that the menu bar has to be called by either clicking the right hand mouse button or by pressing function key F3. Once revealed, the drop down menus function in the normal manner and, where applicable, keyboard alternatives are shown.

In use, Protext is fairly intuitive if you have used another word processor but may prove to be rather tricky for the absolute novice. Protext uses rulers to control margins, tabs, etc., and there is no limit on the number of rulers which can be included in a document apart from those imposed by available memory. Existing rulers can be edited in the normal manner and will affect subsequent text unless you have opted for manual formatting of text using the configuration program - more on this later. Sub and superscripts, italics, underline, etc., are all shown on screen and as long as you are using a monospaced font will show in a WYSIWYG manner. This, however, goes out of the window if your printer offers a proportional font and you select it. Although the printer font is proportional, the screen font is not. This results in the lines of text containing the correct number of words for the proportional font but the screen shows returns at what appear to be odd places. WYSIWYG is then replaced by WYSBNRTWYG (What You See Bears No Resemblance To What You Get). However, when you print this odd-looking document, the results are excellent. Moaning aside, Protext is the first text-based word processor which has allowed me to use the proportional GC Times Roman font on my DeskJet 500 with full justification. You are not however completely confident about how it will look until you have the hard copy. This problem is mentioned in the manual when it explains why columns of text do not appear in a WYSIWYG manner either. The explanation given? Protext is not a DTP package - how very true. When using a proportional font with justification, Protext uses lookup tables for the individual character widths and as a result the screen display is slowed down dramatically while you are typing and I suspect would cause major problems to someone who can touch type - this certainly does not include me!

By default, Protext will use its own file selector but you can reconfigure the program to use the standard GEM selector or any

other that you happen to prefer - I use the Little Green File Selector. Protext's file selector is a massive improvement if you are using the pre-TOS 1.4 selector and even offers some improvements on that.

The FILE menu is comprehensive and offers all the usual options. Although you cannot import text directly from other word processors, the Run Convert option allows conversion of First Word Plus and ASCII formats to Protext format. Other options are on offer but are obviously aimed at PC users. The same option allows you to reverse the procedure and convert your Protext files to FWP or ASCII. I would hope that in a future upgrade the range of word processors covered by this option will be extended to cover Redacteur 3. Up to 36 files can be edited at the same time (overkill), providing you have enough memory. A split screen arrangement allows for easy transfer of text between documents.

The TEXT menu is comprehensive and gives access to the powerful search and replace facilities. These are both comprehensive and very easy to use.

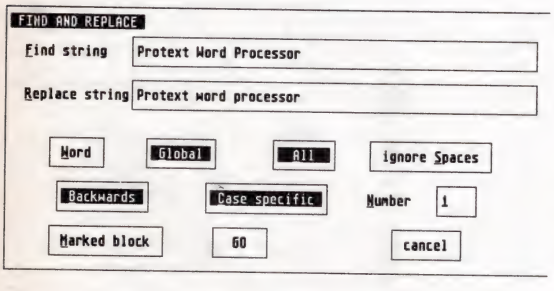
Case switching and character swapping are also handled from this menu and the keyboard shortcuts for these are liable to be among the first that you memorise if your typing is like mine. The choose character option displays a box with all the characters your printer can use and clicking on the desired character inserts it into the text at the current cursor position. This is the same as the character box that lurks behind the edit screen in FWP. The option to add an accent to a letter was a novelty to me but would be indispensable to users who are typing in a foreign language. Block handling is excellent with all the standard options available. A block can be defined either by selecting the start and end points or by dragging downwards with the left hand mouse button depressed. Using this method, the page will scroll downwards when you reach the bottom of the display. Movement around the document is comprehensively covered in the MOVE menu. What I do find irritating is the absence of the GEM slider bar at the right of the screen to assist in large movements - no one could accuse this program of being GEM'd! If you use the cursor keys to move around a document, the speed of movement is very similar to FWP - a pity as I am now used to the speed of Redacteur 3. Deletion of whole or parts of lines as well as the numbering and splitting of lines of text are handled in the LINE options. These facilities are comprehensive and probably more powerful than the majority of users will ever need. One touch which I do like is the ability to insert the time and/or date into a document. This again relies on the internal clock having been set at boot up. I wish Atari would get round to putting real time clocks in all our machines.

Headers and footers are available but are not printed by default. They can be set to different values for left and right pages and can consist of several lines if desired. If they are to include page numbering, you are restricted to Arabic (normal) characters and Roman numerals will have to be handled manually for each page. I feel this is a minor point but they could, and should, have been made available. I have noticed that some of the mail-merge features allow numeric variables to be displayed as Roman numerals which can be used in conjunction with self-incrementing variables. There may be a way to get the desired footer effect by using this feature. As yet, I have not worked out how to do this.

By now, you must be wondering how some of the formatting features (centering, bold, etc.) are inserted into Protext. A line starting with a greater than symbol (>) and followed by a command abbreviation is not printed but is acted upon. This means that at the beginning of a document you define such things as margins, headers, footers etc.. Comment statements can also be inserted in this manner to jog your memory about the document. The net result of this is that the top of a Protext document looks like a page prepared on the old BBC word processor VIEW - horrible!

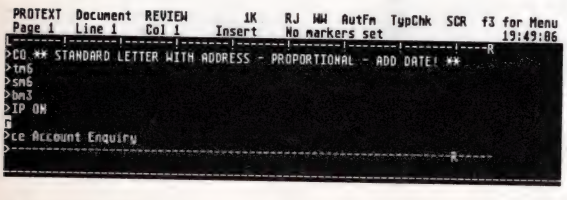
Until you are familiar with these commands, this necessitates having the manual close to hand. Having said this, the commands are generally fairly logical (>CE for Centre). All of the command abbreviations can be gleaned from the excellent on-line help facilities by selecting the HELP menu entry or by pressing the Help key. However, on a floppy based system, this can be fairly slow and involve a lot of disc access.

Printing is well handled and includes the so-called typewriter mode. Anything typed is sent directly to the printer as soon as the return key is pressed. The reason for inclusion of this facility is to make printing envelopes or labels simpler. I can't say I that I see this as being a great help and personally find it a redundant option. If you are using it with a matrix printer make sure that the printer is set to NLQ if this is required before pressing the return key. If marked, a block of text can be printed and I find this to be a very useful offering. The generation of indices and contents lists is very well covered from within the PRINT menu and while powerful in scope manages to remain simple in operation. Spell checking is superb! The dictionary used is a 120,000-word offering from Collins and is one of the most comprehensive dictionaries I have seen for an ST word processor. You can set for check as you type but without a hard drive this is rather sluggish and considering the pace at which you can check a document, probably better left off. Having said this, it is possible to use a "quick" dictionary loaded into memory for much faster checking of more common words. Two different quick dictionaries are supplied and you can select which is loaded into memory using the configuration program which I'll describe in just a moment. Unrecognised words can be corrected, added or ignored. The lookup word facility gives a list of words similar to the unrecognised word and can produce some rather interesting results. Look up "HELP" and one of the alternatives is ELBA - not a word which immediately springs to mind. Generally this feature will give the word which you mean and is impressive both in scope and speed of operation. For the crossword buffs among you, an anagram facility is offered. While slow (understandably) it is very effective and always found the answer I wanted on some nasty test samples. Once you have completed spell checking a document you are presented with some statistics. These are the number of words checked, unrecognised words, words changed and the number of words added to the dictionary. I can find absolutely nothing to criticise about the spell checking in Protext and regard it as one of the best I have

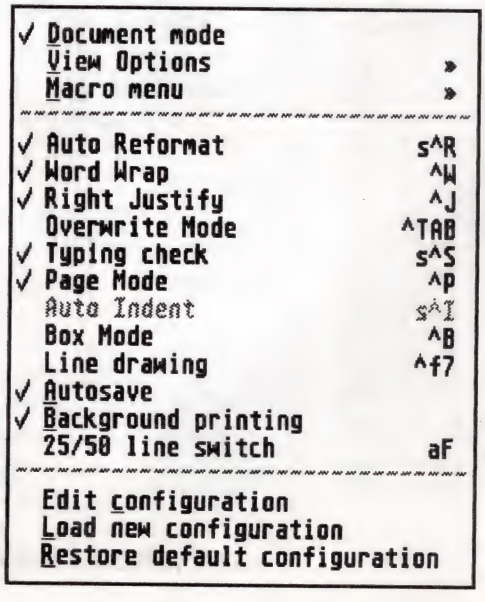


△ The Search and Replace box

▽ The embedded page layout codes



▽ The Options menu



used on any platform. Foreign language dictionaries are available from Arnor but I can offer no comments on these as I was not given any with my review copy.

The STYLE menu gives access to however many fonts are available on your printer and all the associated attributes. On my Deskjet 500, one of the options is for landscape printing which is a useful addition to any word processor. As usual, there is a serious lack of WYSIWYG associated with this feature. The OPTIONS menu allows access to some very interesting and useful features.

In addition to the more common options, this allows access to the Macro menu which is available as a sub-menu. Macros can be defined, saved, loaded and cleared from this menu and are simple to set up and powerful in use. Once you have used a word processor which has a macros facility, you never want to be deprived of it again. The other major feature accessed via the Options menu is access to the configuration program. When Protext is first installed, a file called PROTEXT.CFG is created. A very large number of of Protext features may be configured, from the screen colours and dictionary pathways to 'spell checker on', etc., etc. The file can be edited by running the Configuration program from within Protext to suit your personal preferences. Hard disc owners may choose to have more than one configuration file located in different directories to suit different tasks. In the event of your making a mess of this task, there is the option to restore the default file. This is highly unlikely as the whole process is menu driven and very simple to carry out. The final feature of the OPTIONS menu which I will mention is the so-called Box Mode. Setting this on allows blocks of text to be defined which are effectively columns and do not have to be blocks of complete lines.

This is a feature which I find to have lots of uses and regard it as another of the gems of Protext (no pun intended). The final menu is the HELP menu. This can also be accessed by pressing the HELP key. Most of the common questions are answered in this feature but yet again you are in for a lot of slow disc accessing if you are running from floppies. The help dialogue windows can be scrolled both forwards and backwards - thank goodness for this simple feature. I found that I initially made a lot of use of the on-line help until I became more familiar with the program. Now I regard it as a safety net for when I have forgotten a command and the manual is nowhere in sight.

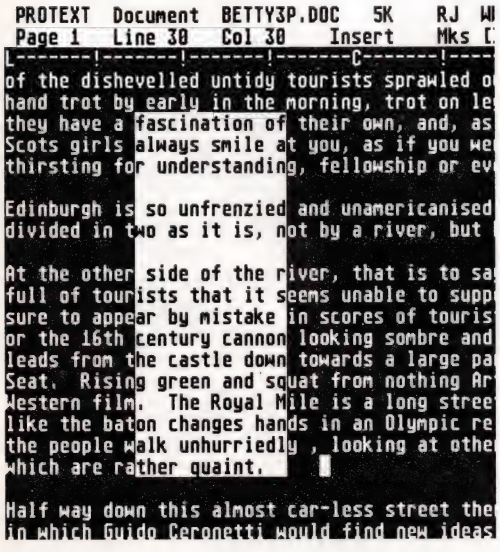
Although there was a great deal of fuss made about the use of menus when version 5 was released, Protext retains its command line features. Pressing the ESC key causes the screen to split. The lower half becomes like a CLI and commands can be typed in for execution. This alternative to the menus can on a number of occasions be a lot faster and more convenient than the menus. This may sound like hypocrisy but I am surprised by how often it proves to be useful. Many features not readily available from the menus can be easily accessed via this route, including a lot of the features normally set using the configuration program. Do take a little advice from someone who was so anti-CLI's that it took him a few weeks to even look at this option and give it a go - you will be pleasantly surprised.

Having dealt with features which were present in version 5 it is now time to look at the new additions. First and foremost is the addition of a thesaurus. These have been standard on PC word processors for quite some time but it is only recently that they have begun to appear for our machines. Protext's thesaurus is rather impressive. Simple in operation and very powerful in scope it offers alternative words to that selected. Selecting the word "REVIEW" results in 26 alternative nouns and 17 alternative verbs being offered in a very short time. These numbers of alternatives are typical of the depth offered by the thesaurus. The next major new feature is text analysis. This counts the number of words in the document then tells you the number of different words, number of paragraphs and sentences etc. The words can then be sorted into a list indexed either by frequency of usage or alphabetically. I'm sure that these pieces of information are of use to some people but I must admit that they leave me stone cold. Automatic hyphenation is now provided and can be turned off and on either from the command menu or in the configuration file. The hyphenation is very intelligent and in the time I have had Protext I have not found any cases where I disagreed with the position of hyphens placed automatically. A neat feature has been added to the print formatting routines which prevents Protext from leaving the last line of a paragraph at the top of a page or the first line at the bottom of a page. This intelligent handling of widows and orphans can again be turned on and off from the command menu or the configuration file. A line drawing feature is a welcome addition. Either single or double lines can be drawn and these can make all the difference to the appearance of a document. The final major new addition is the ability to read Prodata database files for mail merging. This obviates the need to export data to a file. Although previous versions of Protext offered powerful mail merge facilities, the inability to read Prodata files was a serious omission and I really don't understand why it took so long to incorporate it.

I still can't make up my mind how I feel about Protext. This is really rather unusual for me as I normally decide if I like a piece of software in a fairly short time. Here I am some three months of usage later and indecision still reigns. It is so good in so many respects but several facets irritate me. It is not even that easy to say what I dislike about it - more of a general feeling of it not being quite right for me. Overall, Protext is a very good word processor but I do have reservations about the price. This review may well antagonise the large number of Protext fans, but such is life.

You may have noticed that I have made very few comparisons between Protext and the other top flight word processors - Calligrapher Gold, Redacteur 3 and That's Write 2. This is because I am in the midst of preparing a comparative review of these processors along the lines of the group tests in the old ST World and as done by Joe Connor in STA #14 on CAD packages. This should appear shortly provided the review copy of That's Write 2 arrives in the near future.

A final thought before you either dismiss Protext completely or rush out to buy it. Buy the demo version of Protext 5.0 from the ST Club on disc DEM.63 and see what you think. Remember that version 5.5 is better, and then judge for yourself - there are a lot of satisfied users out there.



△ Text selection in 'Box Mode', useful for copying columns of text or figures.

Product:	Protext 5
Version:	5.53
Publisher:	Arnor Ltd. 611 Lincoln Road Peterborough PE1 3HA
Tel:	0733 68909
Price:	£80.00
Manifest:	352pp ring-bound manual; 23pp ring-bound manual supplement; 48pp ring-bound tutorial; 27pp printer driver booklet; 4 d/s discs.
System:	1MB RAM; high/medium resolution.

The Numbers Racket

PD/Shareware Spreadsheets

A Guide and Review by Bob Osola

Writing about spreadsheets is something of a daunting task. The very mention of the word "spreadsheet" is often enough to cause the casual reader to immediately turn the page, assuming that the article will be about as interesting as watching paint dry. I hope to convince the doubters that a little effort can result in tangible benefits. In the last year alone, I have received refunds totalling more than £400 by using a spreadsheet to check the occasional errors that creep into computer-generated (and, it seems, rarely checked) figures produced by both mortgage companies and those good people of the Inland Revenue. A commonly-held view is that spreadsheets are of little or no use beyond accountancy functions. A further disincentive to widespread use is that the successful operation of spreadsheets is perceived as requiring some kind of arcane quasi-programming knowledge. Neither view is true, but they have resulted in the spreadsheet enthusiast becoming seen as the computing equivalent of the train spotter; a slightly odd person with a slightly odd interest. At the risk, therefore, of boring half the readers and insulting the remainder, this article aims to show how spreadsheets can be used to both save money and enhance your word processing/DTP output by including spreadsheet-generated data. It will also briefly review and compare three PD/shareware spreadsheets with the emphasis on friendliness and usability rather than esoteric accountancy functions.

The world of spreadsheets

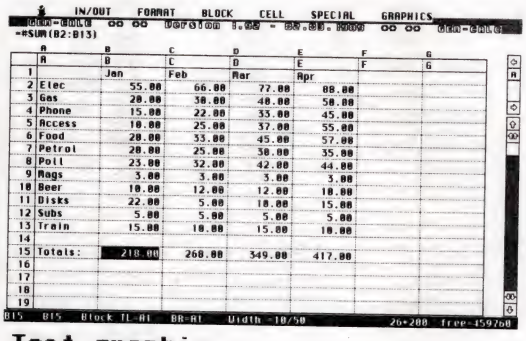
In the business world, sadly dominated by the IBM PC and near clones, there are two contenders for the spreadsheet crown: Lotus 123 and Excel. It is interesting to note that despite the complexity and abundance of facilities offered by these programmes, newer versions have included point and click icons for the humble addition of a column of figures. This is in response to massive user surveys which showed that the majority of spreadsheet operators rarely get beyond using several hundred pounds worth of software as a simple adding machine. So much for the abilities of the business power user. On the ST scene there are several professional spreadsheets, of which the Kuma K-Spread range is probably best known. There are however numerous PD/shareware spreadsheets which include, and in some cases exceed, many of the facilities on offer in commercial programmes. This article will examine:

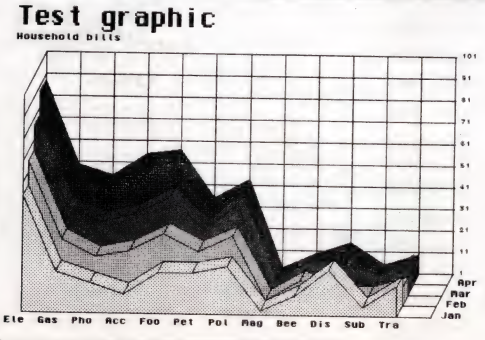
Gem Calc (Club disk UTI.161)
Opus v 2.2 (Club disk UTI.81)
Sheet v2.0 (Club disk UTI.86)

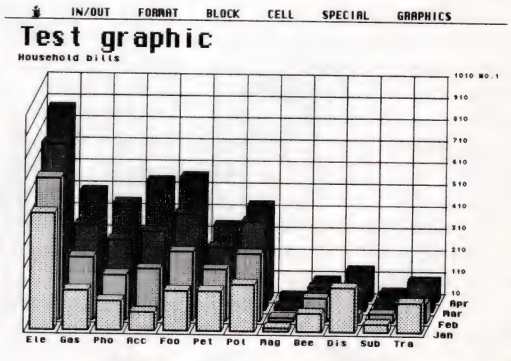
These three spreadsheets are very different in approach and style. They present an ideal way of seeing just what a spreadsheet can do for you, and more importantly, you won't risk the bank manager's ire by experimenting with all of them. So, on with the anorak and out with the notepad...

Spreadsheet commands

Unlike a WP, spreadsheet facilities are not always immediately accessible to the casual experimenter who cannot be bothered to read the manual prior to having a look round the programme. All spreadsheets have common features as regards the basic manipulation of data in cells, though often the commands will, unfortunately, be unique to the individual programme. Data will always be entered as numbers, labels or formulae, and there will be a means of letting the programme know what category of data you are entering, usually in the form of a prefix. Different prefixes within a main category may allow for effects such as the different justification of your columns. Other spreadsheets may do this from a menu. There is no common ground, though usually numbers are simply typed into the desired cell without any prefix. If, like me, you object to wasting half a tree on printing out the manual before deciding whether you like the programme, you really must spend a little time making notes from the screen view of the manual prior to running the programme. Even the basics of entering data and constructing simple formulas are next to impossible without knowing the proper methods to use, and you will soon be back to The Secret of Monkey Island, or other similarly non-lucrative pursuits. The compari-



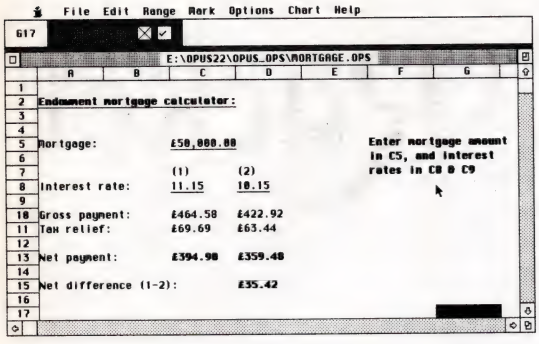




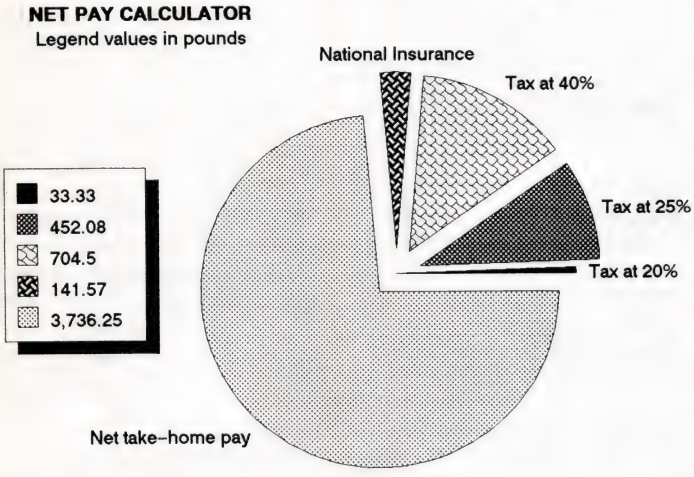
△ Left: An example home accounts worksheet in Gem Calc. Note the formula for the highlighted cell in the top left corner.

△ Right: This is a graphic of the sheet on the left using the "3D block" option captured with the in-built Degas save. The layout and fill patterns are determined by the programme.

◁ This shows the same information using the "3D shape" option.



◁ The removal of the grid together with bold, italic and underlining help to create an attractive screen appearance in Opus. The salary shown is aspirational rather than actual.



△ Metafile of an Opus piechart of the sheet above. Sections may be displaced for emphasis by clicking on the desired slices. Fonts, legend, fill patterns and position of all text are user-configurable.

son table illustrates some of the different approaches used to achieve the same ends.

Unfortunately, PD/shareware disk manuals are not usually strong on beginners' guides. Space precludes a general discussion on getting started in this article, but both Sheet and Opus have several example spreadsheets to play with. Sadly, many of these are designed to show off clever routines or complex functions. I fervently hope that I am not alone in never having heard of, for example, hexokinase kinetics, a worksheet on which is offered with Opus. I object to this type of material being presented in a tutorial. It can only discomfit people (it succeeded in making me feel ignorant), and unnecessarily propagates the "techies only" image of spreadsheets. This can put potential users off what is really a good spreadsheet for all users, not just aficionados (wearers, eaters, drivers?) of hexokinase kinetics. However, any Lotus 123 book (of which there are a great deal) from your local library will have a beginners' section which will be of great use provided you have noted the differences in data entry.

Gem Calc

Gem Calc is the most basic of the three spreadsheets and has the least amount of functions. It also has a rather idiosyncratic way of entering formulae, which is unlike other spreadsheets, and not particularly intuitive. However, it is adequate for simple tasks. It is almost a tradition for a beginner to set up a worksheet for household bills, so the screenshot shows just such a layout with the accompanying 3D graphics. The replicating of a formula (in this case the sum of a column of figures) to adjoining cells is the heart of any spreadsheet. Gem Calc, unlike the other two, does not allow the replication of a formula into a range of cells. It has to be done one cell at a time, by marking the cell to be copied, then putting the cursor into the destination cell, and activating the copy command. This suffices for a single screen job, but is woefully inadequate for large worksheets. Replication of formulae may be either relative or absolute. The example shows a relative replication. This means that the cell references in the original formula are automatically changed as the formula is replicated in order that the total in column C adds up all the C figures, the total in D the D figures, etc. An absolute cell reference does not change during replication, so that constants may be used in calculations. Gem Calc has 24 built-in maths functions which are shown in the help menu. There are no date functions other than showing the current date on screen, so time and date calculations are not possible.

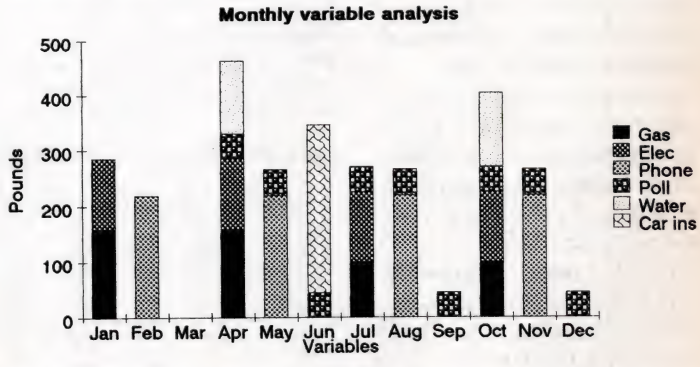
Worksheets may be printed or saved, but not saved to an ASCII file, so that the exporting of calculated information to your word processor is not possible. A straight print out of your work may suffice for home use, but I like to include occasional spreadsheet-generated figures into reports, so that a proper introduction can be made to the calculations. The lack of this facility really rules Gem Calc out from any sort of business application, such as the generation of estimates or bills for inclusion into letters to customers.

Gem Calc supports a fair range of graphics, allowing data to be shown in seven different ways: pie, line, strip and stack in 2D, and column, shape and surface in 3D. The graphics are not of particularly good quality, however. The 3D options are, in my view, more for show than real use, as it is next to impossible to read off a figure against the scale. This sort of representation is becoming almost de rigueur these days, and appears with monotonous regularity in promotional literature of all kinds. Graphic data is saved separately from the worksheet, and there is also an in-built Degas save which produced the screenshots shown. This has the disadvantage of needing editing in an art package to remove all the headers, etc., prior to use in DTP, and is, of course, limited to the resolution of your screen. There is no facility for changing fill patterns, fonts, titles sizes and position etc. Graphics are set up by transferring worksheet data from a series of prompts for the titles, ranges, and offsets, and are fairly easy to use with a little practice.

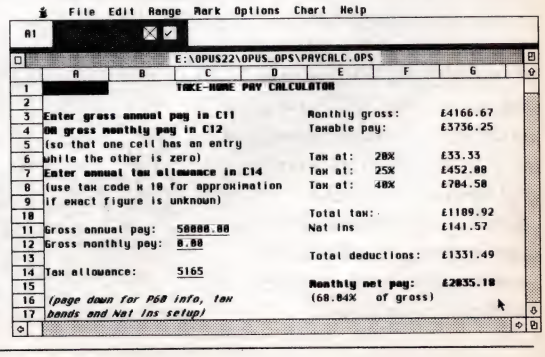
Gem Calc is not the prettiest of spreadsheets to look at. It does not support any alteration of on-screen information, such as emboldening, to improve the overall readability. It does have a large screen option, allowing the user to see 55 rows at once. However, this is only a "quick look" option, as you cannot work the sheet in this mode. There is also a password security facility for the paranoid.

Opus

I am an Opus user, and something of a fan. As a straight spreadsheet, it has plenty of functions, and is probably the easiest of the three to get to grips with. It supports mouse rubber banding for range selection. I find this quicker and easier than manually selecting start and end cells for block



△ Metafile of an Opus stacked block chart. Opus supports four charts per worksheet in six different styles. All fonts, fills and legends are user-configurable.



▷ This single-screen Opus mortgage checker saved me over £150 in an error by the mortgage company.

operations, particularly when you discover that the whole sheet has to be moved to incorporate extra information which you didn't originally foresee (this happens to me every single time I make a new worksheet). It has 81 built-in maths functions, but, sadly, no macro facility, and no facility to include text strings in formulae (though the latter is promised in a later version). Text strings, when used in conjunction with IF statements, are useful for showing an unacceptable condition as a cell alert message, rather than just a number. What I particularly like about Opus is the ability to customise the screen for clarity. It is very easy to come back to a worksheet after a few months, and find that you have forgotten what you are supposed to be calculating. I now make screen notes in bold or italic for clarity, and underline those figures which the user may change. I also embolden the calculated results, so that the whole screen is much more pleasant to look at, and generally easier to understand, as I hope the screenshots illustrate.

Cells can be protected against accidental alteration, or hidden completely. There is also a useful small font mode (for mono users only) which allows you to work on 33 rows on screen. Work can be saved to ASCII for use elsewhere. Remember that if you import spreadsheet information in your WP, you should use a mono-spaced font to maintain the vertical alignment of figures in your final print, unless you tab all the figures into line. The in-built print options for stand-alone prints need setting up with printer codes if you want titles, bold and underlining. Ready-made drivers for Epson generics and the HP DeskJet family are included.

Where Opus really excels is in its graphics facilities. The only drawback to this is that in order to use the charting facilities, GDOS must be installed. Note that Opus can be used normally without GDOS; the graphics menu is simply greyed out. GDOS, it seems, can never be used without a measure of difficulty, the main points of which are as follows: Opus cannot use just any old ASSIGN.SYS file. It will only accept a GDOS set-up where each screen font is matched to an appropriate printer font, which rules out the average Timeworks set-up. Also, the programme will not work with partial TW fonts such as bullets or Drury Lane caps. The author has, however, done his best to pour oil on troubled GDOS waters. There is a programme in the package which examines your existing ASSIGN.SYS file, and writes a new Opus-compatible version. You have to reboot using the new file with GDOS, and then run the included FONTWID.PRG prior to starting Opus to make an OPUS.WID file. This once-only step is to sort out potential problems due to the difference of widths between screen and printer fonts. You will also need the META.SYS file in your GEMSYS folder, with, of course, the appropriate reference to this in your new ASSIGN.SYS file. This is really much easier than it sounds, and is well covered for both floppy and hard disk owners in a separate installation file. It really is worth the effort to persevere here, as the results are superb. Charts can be printed alone, using the included print programme, or saved as Metafiles (GEM format) for inclusion in programmes such as Timeworks which support this facility. Metafiles give resolution-independent graphics of pin-point sharpness which, in Timeworks at 300 dpi, are a joy to behold. Four different charts of area, bar, line, pie, scatter or stacked bar can be made and saved within each worksheet, so that your charts are immediately available next time you open that particular worksheet. No 3D options are available. Note that a chart saved to Metafile prints out at the resolution of your printer, and contains only the information you really want, i.e. just the visible chart without the menu bar or other screen detail. This beats screenshot utilities hands-down in terms of clarity, particularly for large prints.

Just about every facet of a chart can be altered to your requirements, including titles, fonts, numbers, fill patterns, position of figures and legends. Pie charts can have any or all slices separated from their neighbours for highlighting purposes. Individual cells can be marked so that the marked cell value is highlighted on the chart. There is also the facility to set the scales to non-linear modes for higher mathematical functions, and the generation of curves is supported with a spline facility. Splines may only be constructed from cells calculated by mathematical expressions; the generation of curves from random data requires something like Bézier curves, which are promised in a later version. The documentation supplied is rather brief in respect of the graphic functions, but as the author points out, experimentation will always be needed to produce good results. The included worksheets cover most of the facilities on offer, though some of the subjects chosen could have been a little more down-to earth, as discussed earlier.

Sheet

To call Sheet a spreadsheet is to do it an injustice. The author describes it as "a BASIC interpreter in a spreadsheet environment". What this means is that while Sheet can indeed be used as a normal spreadsheet, its real power lies in the facilities offered by various specialised BASIC commands. These allow all manner of functions, such as the generation of custom graphics, the inclusion of text files, the use of GEM alert boxes, window control and many others. This approach is more powerful than a simple macro facility, but is of course anything but

Programme	Gem Calc v1.92 PD (or £5)	Sheet v2.0 Shareware $25	Opus v2.10 Shareware $15
System requirements	Any ST mono/col	Any ST mon/col	1 Meg RAM mono/col
Number entry	type in	type in	type in or key F8
Label entry	type in	' left " right ^ centre	key F9 justify by menu
Formula entry	=	+ (and others)	Key F10
Refer to cell A1:			
relative	~A1	A1	A1
absolute	@A1	$A1	$A1
Example formulae:			
add A1 to A2	=~A1+~A2	+A1+A2	[F10]A1+A2
sum A1 to A10	=#SUM(A1:A10)	+SUM(A1,A10)	[F10]SUM(A1:A10)
Cols/rows	26/200	255/9999	229/999
Active windows	1	4	2
Rows on screen			
normal (mono)	19	18	17
small font	55 (show only)	not this version	33
Style selection	no	no	bold, italic & underline
Save to ASCII	no	yes	yes
2D graphics	yes	not this version	yes
3D graphics	yes	no	no
Save graphics	Degas	no	metafile
Edit graphics	no	no	yes
Charts per worksheet	1	0	4
Maths functions	24	approx 68	81
Date functions	no	yes	yes
Command language	no	BASIC	no
Load/save Lotus	no	load only	load/save (reg version only)
Example worksheets	no	yes	yes
Manual	11 pages	63 pages	32 pages

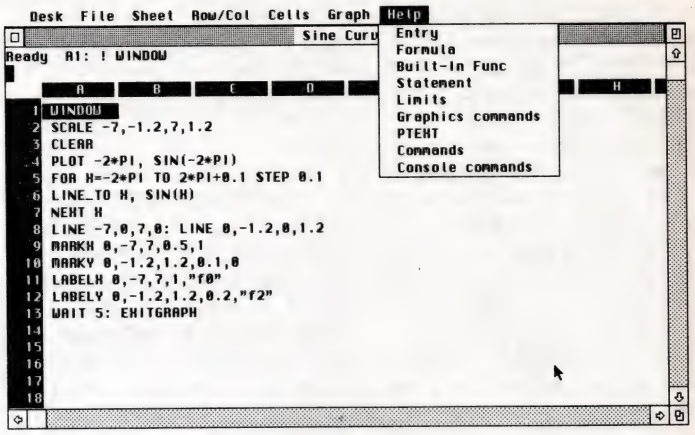
simple to learn. The author suggests that a knowledge of BASIC is needed to get the best out of the programme. 23 example sheets are included, of which 9 are well documented in the substantial manual. Menu-driven graphics are shown as a menu option, but are not implemented in this version.

As a straightforward spreadsheet, Sheet has many good points. It is enormous in size, and allows up to four windows to be opened at once. Information can be saved as a part-file to disk for external use, and there are many mathematical functions built-in. Sadly, the non-appearance of simple graphics means that a lot of effort is required to produce graphic output from the BASIC routines. Also, there are no facilities for altering the appearance of figures on screen. I cannot usefully comment much further, as I don't know any BASIC. The example sheets do all manner of wonderful things - they are mostly fired up by entering @RUN A1, where A1, or whatever, is the first of a set of cells with BASIC commands in. Have your printer on line before trying some of these. Examples include a biorhythm chart, calendar generator, sine curves, ASCII table displayer and address label printer among others. Example routines that do not end themselves can be stopped by pressing the Esc key.

Sheet is not really a spreadsheet for the beginner, or for those who just want to produce easy graphics. It is a powerful tool for the heavy number-crunching user who knows his way around BASIC. Such people can undoubtedly produce a customised programme of some sophistication, but the occasional user is unlikely to want to spend the considerable amount of time that is necessary to get such results.

Summary

I hope this brief review can whet the appetites of people who don't normally bother with spreadsheets. If you can save the sort of money I have by checking your finances, then a little effort in getting to know the basics is time well spent. Also, spreadsheet-generated graphics, particularly those produced by Opus, are much quicker and easier to make than trying to struggle with an art package to create quality graphs or bar charts for DTP and word processor use. There is no clear winner among these programmes. Sheet is for the advanced user who wants to set up customised routines. Opus is probably the best bet for general use, and is certainly the best for graphics if you can bear delving into the madness of GDOS. Gem Calc, written in GFA BASIC, is really rather simple, but may appeal to those disinclined to face the GDOS struggle. GFA fans may find something of use, as the author has included the source code on disk. As with so many other applications, the one that suits your needs is the best.



△ A Sheet biorhythm calculator. Entering @RUN starts a graphic biorhythm generator sequence. The help options are very thorough.

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Users' Guide to First Word

This ring-bound guide to the precursor of First Word Plus is aimed at introducing the basics of word processing in the GEM environment, and at building up the user's confidence with more advanced features.

Included are:

- ✻ Cut/paste block operations
- ✻ Rulers and style menus
- ✻ Printer drivers
- ✻ Various additional utilities such as Ramdisks

The First Word Guide costs £6.95 from the ST Club.

C-manship Complete

Reviewed by Jon Ellis

One of the more recent products to emerge from Kuma's expanded interest in book publishing is C-manship Complete, a collection of tutorial articles that claims to be "the ST programming manual that teaches both C and GEM programming techniques". Jon Ellis has been investigating whether it lives up to this promise.

First impressions

The cover of Clayton Walnum's book is a triumph of the publishing art. On two small pieces of card, Kuma have managed to summarise several of the underlying themes of the book: poor writing style, out of date information, and bad editing.

First, the front cover is adorned with pictures of anchors - a gentle introduction to the dismal nautical references that litter the pages of this American book (C-manship, geddit?). Moving on to the back cover, we are treated to the revelation that the book is made up of articles written over a four-year period (ending in 1990). In addition to this promise of out-of-date programming know-how, the passage contains two glaring typographic errors. Such careless editing does little to inspire confidence in the accuracy of the main text. Kuma should sack their proof-reading team.

Overcoming the urge to put the book down at this point, a quick flick through the text revealed two more points of aggravation. The text is broken up by the frequent appearance of bold section titles. Unfortunately, these headings bear little resemblance to the content of the text. Some of the more informative titles are 'Lets Boogie', 'C, Wherefore Art Thou' and (my favourite) 'Wheres the Beef'. The author is obviously no fan of the apostrophe.

Somewhat more seriously, the program listings and code fragments are printed in a font that looks suspiciously like the Atari low resolution screen font. The effect of this unusual typographic device is to render the source code almost illegible. I defy anyone to reliably differentiate between '0' and '8' without pressing their nose against the page. This is a grave defect in a programming manual, where the listings are central to the purpose of the book.

Learning C

Of the thirty-one chapters that make up the bulk of the book, the first nine are devoted to basic C topics. Beginning with a simple 'Hello World' type program, Clayton Walnum goes on to explore some of the key differences between C and BASIC. The fundamentals of variable types, storage classes and pointers are described adequately. A welcome touch is a printout of the expected output from some of the example programs. This helps to make the desired point, without forcing the reader to type in the program listing.

The text contains the occasional typographic error, though none of any consequence. Throughout the book there are persistent errors of punctuation. Thankfully, the nautical wisecracks are mostly confined to the early chapters, but the general style remains irritatingly condescending. Surely it is possible to teach programming without writing sentences like (p10):

Hmmm. What happens if we try to add 1 to an integer that's already at its maximum value of 32767? Can you guess?

In later chapters, other important features of C such as the wealth of operators and flow control statements are also covered. Structures and standard I/O functions are also mentioned, although the treatment could hardly be called comprehensive. One annoying omission was any reference to operator precedence: the difference between x = *p+1 and x = *(p+1).

One area which may cause some trouble for beginners trying to use the book to learn C is that of portability between compilers. All the examples in the book assume that an 'int' variable is 16 bits wide, and therefore can only contain values between -32768 and +32767. This is not true for all C compilers: some use 32-bit integers. This difference alone will ensure that some programs will not run correctly without alteration. The listings were written for Megamax C/Laser C, but no advice is offered on porting to other compilers.

Another major deficiency in the treatment of the C language is the absence of any reference to ANSI C. The original dialect of C was described in the first edition of Kernighan and Ritchie's book *"The C Programming Language"*, back in 1978. More recently, the American National Standards Institute (ANSI) issued a standard definition of the language including some advanced features not present in K&R C, and it is this version of C which should be used for new programs. There seems little point in learning an obsolete version of the language.

The book sticks broadly to K&R C, which is bad enough, but it also includes some harmful ideas which will create problems when the reader encounters an ANSI C compiler. Most notable amongst these is the carelessness with which function types are declared. The treatment of the 'void' type is quite horrifying.

Learning GEM

Building on the basics of C introduced in earlier chapters, Clayton Walnum proceeds to introduce the usual array of VDI and AES functions, again through the medium of example programs. This material is covered competently enough, but there is little here that has not been said many times before in other places. The best chapters in this section are the four that deal with window handling. This is a difficult topic to master, and it is approached in a confident and clear fashion.

When printing a listing of any GEM application, one of the major problems is how to represent the resource file. Having waded through some of the longer listings in this book, I can confidently say how it should not be done: using ST BASIC (remember that?) listings with lots of DATA statements! This should bring back unhappy memories for ex-Spectrum owners of hours spent typing in pages of hex data from magazine listings.

For those with limited patience, Kuma offer an optional extra, a disk pack containing the listings from the book at the very generous price of £10 + £1.50 postage and packing. The review copy of the book was supplied without disks, so I cannot comment further on this.

The last five chapters of the book are largely made up of a home finance program: MicroCheckST. According to the author, this is a 'commercial quality' application and should be a useful illustration of the GEM techniques in use.

Conclusions

Having read the book, I am left with the impression that beneath all the rubbish there might once have been a useful tutorial. The book is by no means a complete guide to either C or GEM, but then it was never intended to be either. In 1987, Clayton Walnum's columns were probably acceptable, but in late 1992 the text is looking very dusty indeed. If Kuma are serious about wanting to make anything of this, they should commission a second edition from an editor with a chainsaw and a modern C compiler.

Should you buy it? Not really, unless you like the thought of learning an obsolete version of C from an author whose opinion of arrays is *"they're neat little critters"*. Your money, your choice.

Alternatives

If you are serious about learning C and GEM programming on the ST, buy a copy of Kernighan and Ritchie (*The C Programming Language* (second edition), published by Prentice-Hall), or, even better, an ANSI C textbook. These will give you hard facts about the language which will be useful if you need to write for other computers. For GEM programming, there are few better introductions than Tim Oren's series *Professional GEM Programming*. The material is a little dated, but it is free (on ST Club PD disk TXD*01) and there is some sound advice on programming.

Points For:

- ✓ Reasonably complete coverage of basic C topics
- ✓ Good selection of example programs

Points Against:

- ✘ Badly out-of-date in places.
- ✘ Irritatingly jokey and condescending style.
- ✘ Poor typography, particularly for program listings.

Product:	**C-manship Complete by Clayton Walnum**
ISBN:	0-7457-0042-X
Version:	Copyright date: 1990
Supplier:	Kuma Computers Ltd 12 Horseshoe Park, Pangbourne, Berkshire RG8 7JW
Telephone:	0734 844335
FAX:	0734 844339
Price:	£14.95; Optional disk containing listings from the book, £10 + £1.50 p&p, available direct from Kuma.
Manifest:	Book: paperback, 398+xvii pages; Introduction, 31 chapters, 2 appendices and Index.

A Practical Guide to Calamus DTP

by L.T. Freedman

Reviewed by Andrew South

As a DTP user looking to improve my skills, but a relative newcomer to Calamus, I was attracted by this book's promise to take into account the basic principles of page layout and design and to introduce concepts as they are needed. Less meaningful to me was the statement that the book covers all the skills needed to pass the CIT and RSA CLAIT examinations! As the book was published in 1991, the original version of Calamus (v1.09n) is covered rather than the latest upgrade.

Organisation

The book is divided into 3 sections:
1) An overview of DTP in general and Calamus in particular
2) A tutorial section, and
3) A miscellaneous section.
Unusually for a book of this nature, no index is provided.

Outline

The first section gives a very brief outline of what DTP is - far less than would be needed for even a short magazine article on the subject - and tells the reader how to get Calamus started. Setting margins and guidelines are described, as are drawing a text frame and saving a document. No actual text entry is covered here.

Tutorial

The second section forms the greatest part of the book, and comprises 7 "projects". The first of these merely covers entering and restyling text, and progress continues at a similar rate through the remainder of the section. Interesting titles for the projects disguise the fact that these are simple hands-on tutorials: the "Newsletter" project describes how to set up multiple columns, while the "Standard Forms" project covers text rules. In this simple step-by-step fashion most of the main facilities of Calamus are covered. Disappointingly, though, there are no examples of finished products, and almost the only advice on design is a short discussion of different types of fonts.

Further Aspects

The third section contains descriptions of a number of Calamus functions which were not needed in Section Two, and therefore escaped mention. Not all the missing facilities are covered here, as the author refers the reader to the Calamus manual for those which are used only infrequently. I found it rather disturbing that one such subject is manual kerning - despite the fact that one of the projects in the previous section is called "Posters".

Setting an example

The last page in the book proclaims that it was produced using That's Write and Calamus. Given this and the subject-matter, it might be expected that the book itself should be an example of good desktop publishing. Unfortunately it comes close to being the opposite. Typographical errors abound throughout, despite the advantages of a spelling checker mentioned in the text; words and paragraphs run into each other; pictures of Calamus icons are in various sizes and in various positions on the page; and an "em dash" is used throughout the text in place of a hyphen.

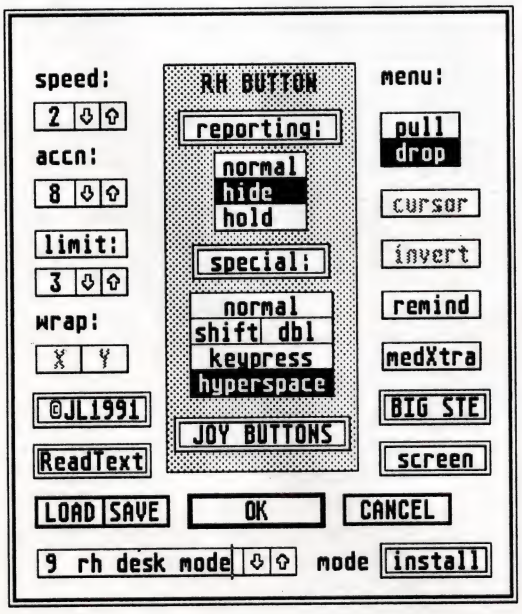
Even the step-by-step instructions provided are not always accurate. Calamus displays a large and potentially confusing double dialogue box for search and replace functions. The book instructs the user first to "confiure (sic) the SEARCH dialogue box" and then click on "Start" to replace all one font with another. Unless the REPLACE dialogue is also 'configured', however, nothing will actually happen!

Conclusion

Given the limited nature of the Calamus manual, there must be room for a text which helps the user to use the program productively. This book might conceivably be of use to the absolute beginner - one who needs the term "double-clicking" explained (as it is on page 20) - but anyone with a little experience of using the ST would find his way round Calamus more quickly by experimenting on his own.

Title:.....A Practical Guide to CALAMUS DESKTOP PUBLISHING on the Atari ST
Author:..... L T Freedman
Pages:..... 230
Publisher:
Kuma Computers Ltd,
Pangbourne, Berkshire
Price:..... £14.95
ISBN:..... 0-7457-0159-0

Mouse Tricks 2



just £9.95

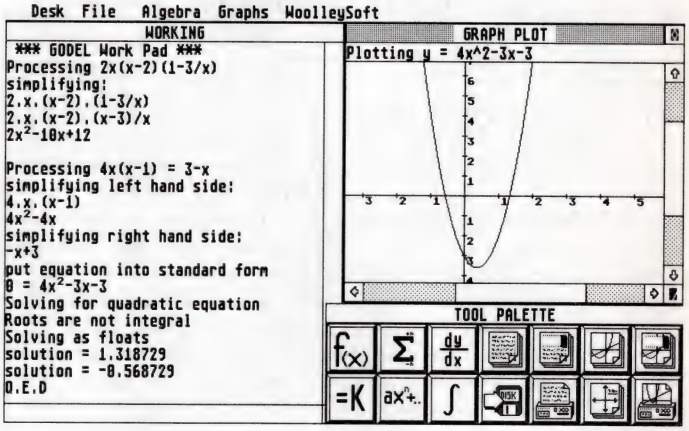
The ST Club
2 Broadway
Nottingham
NG1 1PS
Phone (0602) 410241

Features:

* Mouse Tricks combines many of the functions of existing mouse utilities in a single desk accessory and adds numerous extra functions of its own.
* Mouse Tricks can set up suitable modes of mouse behaviour for particular programs. An optional screen saver is also included.
* Mouse speed can be reduced as well as increased. This allows a cross-hair mouse add-on such as "Tracey" to trace artwork of any size.
* All the functions of Mouse Tricks can be adjusted through a set of easy to follow dialog boxes.
* As many as 20 different settings can be named and saved, and each mode can be selected via a dialog or a user selected keycode.
* Mouse Tricks keeps a list of up to 40 different programs; for each program on the list you can specify both the mode you wish to be installed when a program is run, and the maximum amount of memory initially available to that program.
* Mouse Tricks contains a text reading utility, Read Text, with which you can load, read and switch between as many as eight text files from within any program that allows access to desk accessories.
* Read Text can also be invoked by double-clicking on the desktop icon of the file you want to read, or by pressing a user defined keycode.
* Big STE is a virtual screen utility that uses the STE's video display hardware to provide instantaneous smooth scrolling around virtual large screens of any (feasible) dimensions, with the option of an interlaced display for any screens with double (or greater) the normal screen height.
* Tutorial function to help you learn to use Mouse Tricks.
* Comprehensive 70-page ring-bound manual supplied.

Hello Godel, Goodbye Homework?

David Harvey reviews Godel, the new shareware maths program from WoolleySoft, with a word on The Guru, a hypertext desk accessory which supplies an on-line manual to Godel.



A refreshing change from the standard PD offerings, Godel is a mathematics processor, with the ability to simplify and solve equations, perform calculus and sum the values of an equation in a given range. Maths programs such as these are by no means common: there are one or two extremely sophisticated applications available on Apple Macintosh and IBM PC, but to the best of my knowledge this is the first example of its type on the ST.

When Godel is loaded it displays, in addition to a standard GEM menu, three windows. One of these, the TOOL PALETTE, has an icon for each of the main menu options, so the program can be driven without using the menu at all. A WORKING window is used by the program to display the results of simplifications and other functions, while the third window, GRAPH PLOT, is dedicated to plotting the graphs of equations entered.

Expressions and Equations

The capabilities of Godel are geared towards handling expressions and equations, which are entered into the program through a simple dialog box. Expressions involve a single variable x, and are simplified by the program as soon as they are entered:

```
2x(x-2)(1-3/x)

Processing 2x(x-2)(1-3/x)
simplifying:
2.x.(x-2).(1-3/x)
2.x.(x-2).(x-3)/x
2x^2-10x+12
```

Godel understands parentheses, which may be nested to any level. Powers may be entered using the familiar '^' notation (x^2 being interpreted as x-squared). Equations may be entered in the following forms:

(1) 4x(x-1) = 3-x
(2) y = x(x+1)(x-1)

These are then simplified and (in the case of the first type) solved, and may be plotted, summed, differentiated or integrated:

```
Processing 4x(x-1) = 3-x
simplifying left hand side:
4.x.(x-1)
4x^2-4x
simplifying right hand side:
-x+3
put equation into standard
form
0 = 4x^2-3x-3
Solving for quadratic equation
Roots are not integral
Solving as floats
solution = 1.318729
solution = -0.568729
Q.E.D
```

The equation plotting function in particular is very good to have: the mathematical imagination is often strikingly visual, and being able to see the shapes of functions as they are entered will help anyone having trouble grasping the characteristics of quadratic, cubic and higher equations. The program displays a progress window while it is working on plotting the graph, with a graphic representation of the amount of work done. Equations can be plotted over one another, another useful feature which can help with the solving of simultaneous equations, and with investigating the effects of changing coefficients in an expression. The work window and graph may be printed (the graph on an Epson compatible printer, I assume), and the contents of the WORKING window (as above) may be saved to a file for reference.

Nice to have...

Without question, a program of this sort leaves you wishing for more! There is hardly anything in the program that could be regarded as an error (although there seem to be problems in solving some cubic and higher equations). After a week of using Godel, here is some of what I would like to see:

* Input of floating point numbers (currently you cannot adequately approximate pi, leading on to...)
* Trigonometric functions (sine, cosine, tangent - this would complete the program's coverage of basic mathematical techniques)
* Solution of simultaneous equations
* Handling of inequalities
* A grid on the graph plot window, and a locate function (click on a point, and the program tells you where you are)
* Save graph to .IMG file

The first three of these in particular may take a great deal of work, but would make Godel an invaluable tool for learning - and teaching - maths, up to GCSE and beyond. Cue the shareware argument: if enough people register, the author will be encouraged to enhance the program. It's up to us!

The Guru

Although Godel is supplied with a reference manual, you are encouraged not to use it! This is because the documentation is reproduced for the use of The Guru, which makes it available from within the maths program.

If you are familiar with an earlier WoolleySoft program, Hype! (reviewed in ST Applications issue 12), the concepts behind The Guru will come as no surprise to you. The Guru is a hypertext desk accessory, which can be used to move through pages of information in a non-linear way. Clicking on a highlighted word takes you to a page of related information, which may in turn reference other pages. A hypertext document is a network of such associations, a natural way of presenting and using many types of information. The idea is particularly appropriate for reference material: having the manual for Godel available on-line as you learn and use the package is a distinct advantage. The restrictions of use as a desk accessory places some limitations on the material which can be presented in The Guru: unlike Hype!, for example, The Guru cannot display graphical information. For straightforward software documentation, this is not a problem, so using the two programs together, at least in the early stages, makes learning the ropes much easier.

The program accepts data from a plain ASCII file: the manual describes how to go about producing your own hypertext documents.

Shareware considerations

In common with most shareware programs, the public domain versions of Godel and The Guru impose certain restrictions. In Godel, you may not enter equations with powers of x greater than 1 (although expressions of any complexity may be entered), and no intermediate working-out is shown. The unregistered version of The Guru displays a polite 'reminder' every time you traverse a hypertext link. Registering Godel will cost you £10.00, for which you receive a full and personalised copy of the program with all restrictions removed. Registering The Guru is also £10.00, although if you contribute a file of data for the program (greater than 20k in size) you pay only £5.00.

But is it cheating?

If you are embarking on GCSE maths, or if you are getting into mathematics either early or late and would like to use your ST to help, you will find Godel an extremely useful program. Don't use it to do your homework, or at least not all of it - I would hate to be accused of encouraging cheating! What is more, I doubt if many maths teachers would be fooled by some of the program's working-out which, although always correct, is by definition mechanical. Use it instead to 'play' with equations and expressions, to develop a feel for the raw materials of mathematics. Godel is educational software in the best sense, and an excellent example of useful high-quality shareware. Its author is acquiring a reputation for developing interesting and unusual applications: Godel should do much to spread the word.

Kurt Gödel

Kurt Gödel (1906-1978) was an Austrian logician who in 1931 shook the mathematical world with a paper entitled 'On Formally Undecidable Propositions of *Principia Mathematica* and Related Systems'. Earlier in the century, the philosophers Bertrand Russell and Alfred North Whitehead had attempted to place the whole of mathematics on a secure logical foundation in the colossal opus mentioned in the title of Gödel's paper. Gödel was able to show that in any axiomatic system of sufficient complexity there will always be theorems which can neither be proved nor disproved within the system. In so doing he established that provability was a weaker notion than truth. Douglas Hofstadter illuminates Gödel's work in his book *Gödel, Escher, Bach*, where it is placed in the context of music, art, logic, the nature of thought, and the prospects for artificial intelligence.

Conclusions

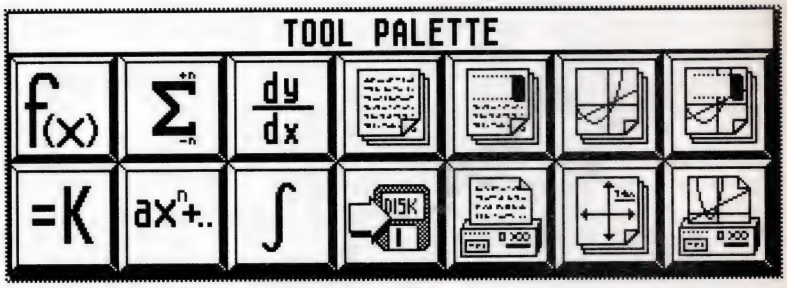
Points for:

- ✓ Easy to use
- ✓ Very capable at what it does
- ✓ Online documentation in The Guru

Points against:

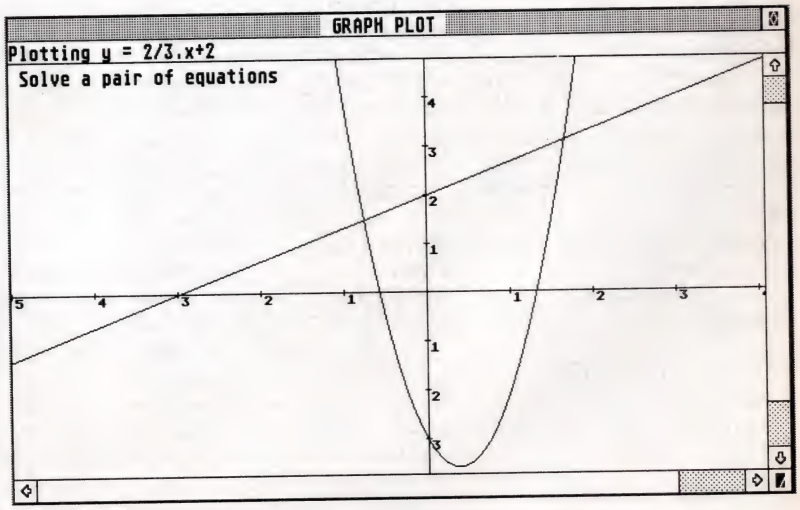
- ✘ A little limited in its range of mathematical features

An interesting and unusual program, ideal for exploring simple algebra and calculus.



△ The Godel Toolbox

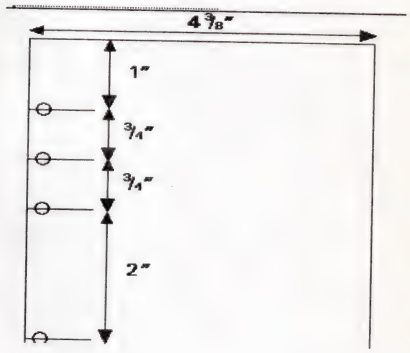
Product:..... Godel and The Guru
Version: 1.0
Publisher:..... WoolleySoft,
Humblesknowe Cottage,
Raymole,
Dunblane,
Perthshire
Scotland.
FK15 0BA
Price:..... Registered versions of each program £10.00.
Manifest: .....One single-sided disk. Shareware version of The Guru supplied free with Godel.
Requires:.....Any ST, mono or medium resolution colour monitor.



△ Many equations may be plotted on a single graph.

DESKTOP IDEAS

by Andrew South



Some months ago I saw the result of a readers' survey in ST Format, the graphs for which showed that more ST owners have DTP software than any other type of program. Even when I realised that the key to the graph had been garbled, it still appeared that more than 35% of those who replied to the survey own a DTP program, and a further 20% intend to buy one.
So what do all these avid DTP-ers actually do with their software? They can't all be publishing newsletters or producing posters for local events. If you're looking for ideas, I hope you might find some of mine useful.

Marking time

These days a number of people use a filofax or something similar to help them to organise their time. These binders are a convenient place to keep diary, phone list and a variety of notes in a standard form. One problem, though, is the high cost of replacement pages; but not if you're prepared to do a little trimming and hole-punching - you can produce them yourself on your ST. It may take a while to get a particular form just how you want it, but you can then print off as many as you need for the cost of paper and ink (or toner).

First things first

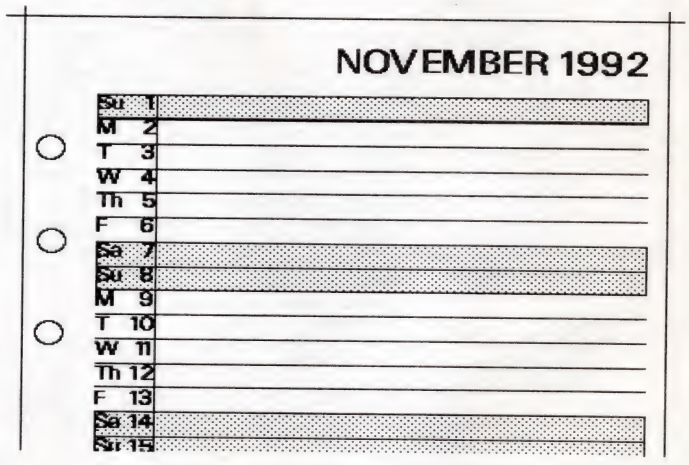
Before leaping into designing the new form to keep track of your business mileage or travelling expenses, take time to prepare the ground. It makes the development of any form easier if a template is made first. This need only be a box of the right size to match your filofax, though additional lines can help with page trimming. Unless you have a special 6-hole paper punch, it also makes sense to mark the hole positions on the page.

The diagram below shows the approximate measurements of a page from my own black book. Though these items are fairly standard, it is probably a good idea to have recourse to a good old analogue ruler to see whether yours matches. If your software provides for auxiliary guidelines, these can be helpful in setting the page up accurately. There is ample room on a sheet of A4 (landscape) for two pages side by side, so it is as well to arrange the template with this in mind.

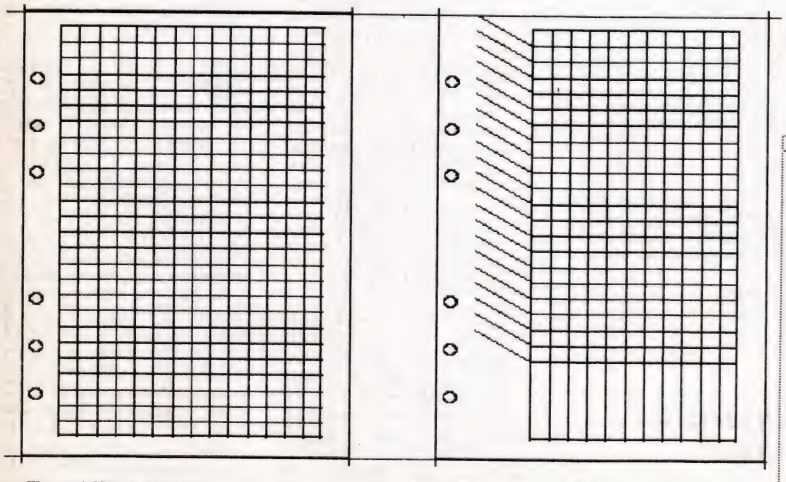
Now for the meat

With the template complete and saved for future use, the design of the page itself can begin. A "snap to grid" facility is useful here to achieve a tidy layout without unnecessary guidelines. Lines and boxes are useful, and a light shading can be used to good effect in highlighting areas of the page. The content of the page can be as simple or as complex as you like, from straightforward grids (like commercially-produced pages) to special-purpose forms of your own design. The screenshots show examples of possible forms. Files of these and a template for Calamus users will be included on DMG.33.

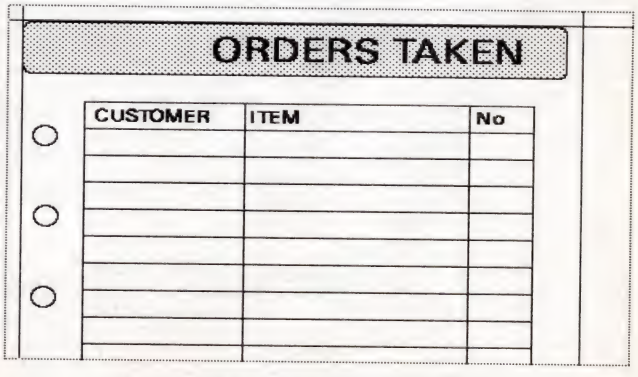
When the page is done, duplicate the contents to give two copies per page... and print off as many as you need.



△ This "month at a view" diary page uses shading to highlight weekends. To change it for different months, days are added to or subtracted from the text item and the shaded weekend boxes moved accordingly.



△ Two different grids are produced easily with a "snap to grid" function. The two pages sit side by side on landscape A4.



△ An example of a purpose-designed form.

PD Update 12.8

All disks in this update are Double Sided. Because we have re-organised many sections of the main PD catalogue - in preparation for version 13 of our catalogue - there will be some items on these disks which are duplicated on earlier disks in the current catalogue. Files in this update are only new versions of programs where the version number has increased. This will all settle down with the launch of our new catalogue early in the new year; although it now looks as though we will not be able to indicate Falcon compatibility in the first printing of the new catalogue...

Comm's Utilities

COM.45: BBS UTILITIES: AUTOCRUNCH v1.7 - QuickBBS utility - automatically joins all Files.Bbs's into one large file which can be packed - supports LZH, ARC and ZIP: DL TOTAL v1.0 - for QuickBBS - automatically counts any system downloads and adds them to the FILES.BBS description: DOORS - automates generation of a Games menu for Michtron BBS: EMPIRE20 - Galactic Empire on-line game for Michtron's BBS 3.0: MEEP v6.0 - Multiple Enhancement Express Package for use with BBS Express ST v1.3: MKFBBS v2.5 - Make FILES.BBS - creates a list of available file services for BBS's: NFL YEST - Michtron BBS 3.0 on-line game: SPACE EMPIRE ELITE v2.0 - Michtron BBS 3.0 on-line game of galactic conquest - players build empires, spy, and lots more: TOP 10 - For use with Michtrom BBS v3.0 - logs the Top 10 users?

COM.46: Communications Utilities: ARKADE CONTROLLER v1.7 - controls sending FoReM BBS files to games: BUSYBUD - prevents timeouts when accessing a BBS: CALL TIME v3.0 - calls the Naval Observatory in Washington DC to get the time: CONFIG - set-up RS232 - configure up to 19200 baud: CREATOR1 v1.0 - Genie DO file creator: CTS PATCH - TOS 1.4 fix for RTS/CTS: DCDRPDTR - DC Drop DTR drops the RS-232 DTR line for one second, and then re-asserts it - should hangup any modem: DCHANGUP - DC Hang Up - hangup modem after a period modem inactivity: FFR 3.04 - File fractioniser - splits up large files ($C): GHOSTWRT - Ghostwriter - 'types' a message so texts prepared off-line can be uploaded to BBS systems that do not permit uploading of text files to message areas: HSFIX - high speed modem fix for TOS 1.4+ and 16MHz+ processor - stops character loss and speeds up performance: HSPD 232 - ACC to set the baud rate of the RS232 port - uses RTS/CTS: LINK3 - Line Noise Killer - automatic error correction of RS232 data - advantages of a MNP modem without the cost!: MNP9 - description of the various (MNP) Microcom networking protocols.

COM.47: TERMINALS: BMODEM v2.3a - Terminal program with script language capabilities: DTERM - VT52 emulator, to replace the ST Term supplied by Atari, many more features than ST Term: FZT D211 - FreeZe Dried Terminal v2.11. Features VT-52, ANSI, UBT-Graphics and Instant Graphics emulations: X, Y, Z and F-modem protocols: Auto dialer: Auto log-on sequences, and auto-macros for each BBS: and a 32000 line capture buffer (1MB).

COM.48: TERMINALS: RUFUS v1.10 - Terminal program from Germany - features: X, Y, and Z Modem: TTY, VT52, and VT100 emulations: batch file facility with GEM support (M): VANTERM v4.0 - excellent comms package with lots of features, extensive on-line help, and full documentation - this new version features cosmetic changes and minor bug fixes.

COM.49: TERMINALS AND UTILITIES: FONECOST v2.2 - calculates the cost of a phone call: INSTANT GRAPHICS v2.14 - generates graphics and sound by modem. Full docs on COM.39: MODEM FUN - two two-player games to play by modem (or null modem): Blackjack and Modem Knights: TRAPIDO v1.10 - German terminal emulator - plenty of options: the usual modem set-up facilities, ASCII, VT52, VT100 emulation. All docs and menus in German (M): V23EMU - patch to allow V23 (1200/75 baud) comms.

COM.50: TERMINALS AND UTILITIES: MOTERM ELITE v1.41 - comms package: medium or high resolution graphics and sound that can be transferred online. Dmodem that is faster and more accurate than Xmodem, text editor, automatic dialler, fast Xmodem file transfer, and more (1MB): TEDDY TERM v1.0 - shell program for use with XYZ file transfer: TELEBASE v1.4 - keep track of phone numbers: TURBOCTS - fix for problems with RTS/CTS handshaking.

COM.51: QMAIL READERS AND UTILITIES: 7PLUS v1.63 - file handling utility for comms - can encode data (similarly to UUE), transfer the data, and any errors result in only the erroneous bit of data being re-sent (not the whole file) ($C): MAXIMISER ST v1.25 - read and respond to messages downloaded from a BBS through a QWK compatible door: MICROTALK QWK READER v1.05 - read and reply to messages downloaded via a QWK compatible door.

Drawing Utilities

DRG.52: 3D PICTURE v1.00 - Create pictures using 3D wireframe objects: ART ST v2.32 - paint program that will load and save in Neo and Degas formats: QRT - Quick Ray Trace - excellent ray tracing program. Complex objects can be rendered in 24-bit colour and then be converted to a Spectrum 512 picture file. Very impressive results possible (C): REALRAY - ray tracing program (C): VOLUME - 3D modeling program that can easily generate sculpted objects via an easy to use interface - results can be similar to output from CAD 3D. Pleasing results easily achieved. (C).

DRG.53: CRANACH v1.1 - demo of a German image manipulation program. Loads Tiff, IFF, Simplex (SMP), ESimplex (ESM), PI1, NEO, PI2, IMG, SMP, BLK. All menues in German. No docs: DRAHTMOD - creates 3D polygonal objects. (M): RAM WORLD - 3D object creator and viewer. Create objects and rooms, by defining points and vertices. The resulting "world" can then be examined using mouse, keyboard or joystick. Very smooth 3D movement. (C)

DRG.55: MINIDRAFT v1.10 - a drafting program. Incorporates various tools and symbols for creating electrical, mechanical and architectural drawings (M).

DRG.56: JC VIEW v1.1f - Clip Art viewer and paint program. Can load and manipulate PI3, PC3, PAC, TN3, ADD (sticker), SHP (Printmaster), MAC, DOO, CMP, and PIC. Features the usual drawing tools: SMOOTH DRAW v2.0 - all the features of Degas Elite and more! Loads and saves lots of file formats, printing to EPSON compatible, clipping for programmers, sprite and mouse editor for programmers, and exact entry by pixel coordinate of most functions. Magnify, flip the picture, grab blocks for copying, move, flipping or saving, and more.

Archivers & Packers

UTI.226: ARCHIVE SHELLS: ARCGSH v4.1 - greatly eases the use of well known Archivers - supports: Zoo, Arc, LHArc, Shar, UUe and UUd - can also access your favourite file viewer and editor directly from ARCGSH: ARCShell v3.1 - GEM shell for ARC and LHARC: ARCSYS v2.71 - shell for ARC v6.02 - menu is very similar to Arc Shell but no support for any other archivers: EZ LZH - shell for LHArc - makes creating archives easier: MULTIARC v1.3 - utility for mass extraction of ARC, LHARC, and ZOO archives. ARC, LHARC, and ZOO required.

UTI.227: ARC ARCHIVERS: ARC v5.21 - excellent file compressor plus lots of docs and MARC: ARC v6.02 - latest (and last?) version - now ARCs whole directory trees and is much faster: ARCIT - automatic ARC'ing of files from folders: ARCX - ARC extractor only: DARC - Archives whole directories: DC XTRACT - Extracts (and runs?) programs from ARC files: DEARCII - Another GEM'd deARC utility, deletes the old ARC's: TCARC v1.01 - version of ARC v5.21a re-compiled using Turbo C - much faster than the original: TURBO ARC - slightly faster than ARC 5.21 but compaction is not as efficient as ARC: UNARC - extracts files from ARC archives: UNARCIT - automatically ARC/unARC entire disks including folders and sub-folders.

UTI.228: LHARC: DESELF - remove the self extracting headers from self extracting LHarc files: FASTLZ v2.0 - LHARC compression and extraction program. Can cope with full path names: LHARC v0.60 - File compression utility from DeltaVision Systems - 25% to 35% faster than v0.51 and now allows user-defined text to be displayed before a file is unarchived: LHXARC - small program for unpacking archives created using LHARC: LZH11318 - Optimised version of the original LHARC 1.13b, written by the originator of LHARC, Haruyasu Yoshizaki, and optimised by Quester: LZH201L - latest LHARC201 by Quester and Yoshi - the best LHARCer for the ST and entirely compatible with the PC (-lh5- compression): SFX LZH - creates self extracting archives from LHArc compressed files: UNLZH v1.72 - very fast unarchiver - possibly the fastest on the ST: XLHARC v1.02 - LHArc program by Bill Shroka. ($C).

UTI.229: Archivers And Utilities: A2LSWITCH v1.02 - converts files between ARC and LHARC compressions: AR - archiver in the style of ARC: COMPRESS - file compressor: COMPRESS - Huffman encoding and decoding ($MOD2): EZSQUZ - SQueeze file compressor and uncompressor: FPCU22 - Formerly released as CNVTLZH. A specialized shell for Lharc, STZIP, and ARC that will let you select a path of files and compress each file into an individual archive-file. Now supports Quester's AFX (Lharc): LIBRARY - combines files into a single library file: SHAR - creates shell archives that can be extracted by the Unix bourne shell: ST ABE - ASCII binary encoder - replacement for UUE/UUD, for usenet file transmission: STPACK - file packer: STSQUEEZE - squeezes files: STUNARJ - ST version of the new PC compression format: 'ARJ'. ARJ is the best of both worlds, it compresses slightly more than LHA at PKZIP speed. This ST version is between 2 and 3 times faster than ARC 6.02 or LHARC 1.13. No compression program for the ST - extractor only: TAU - Text Archiving Utility - for packing text files: UNPIT - no PIT! - something to do with (Mac?) PacKit: UNTAR - Reads single files or a batch of files of archives created with the TAR backup program.

UTI.230: ARCHIVE SHELLS AND ZIP: LZH SHELL v1.1 - Shell for LHARC 0.6ß or newer: STZIP v2.0 - GEMmed ZIP file manager. Compresses and extracts from the ZIP file format commonly used on PC's. Now supports PKZIP deflation: TACS - Desktop-like shell for ARC.TTP: UNZIP - Zip file extraction utility: ZOOBOY65 - shell for ZOO.

UTI.231: UUX AND ZOO: BOOZ v1.02 - Zoo file extractor and lister: DUMAS - UUencode and UUdecode, for converting files into ASCII for transfer on usenet. ($C): UUCODE10 - GEM-based, mouse-driven program that encodes and decodes files - supports the uuencode format commonly used on Usenet. ($C): UUE - UUcoder ($C): UURENAME - UU utility: UUSTUFF - UU encode and decode: UUX v3.1 - UUEcode/encode ($C): ZOO v2.1 - an archiving method that is commonly used on the Amiga. This version features improved compression.

UTI.232: Program Packers: ATOMIK v3.5 - Program and data file packer and depacker: AUTO v2.3 - program packer: can make executable programs more compact: AUTOMATION PACKER v5.01 - executable and data file packer based on Pack Ice v2.31 ($ASM): BYTEKILLER - three efficient program packers - includes an editor to set the screen effects to be shown as the program unpacks itself: HAPPY - happy computer packer: HAPPY EDIT - change the screen fx displayed when Happy programs unpack - also unpacks Happy PRGs: ICE v2.4 - program packer. Includes source codes for unpacking packed files: JAM PACK v1.4 - program packer: JAMPACKER v4.0 - packs programs and disks using a variety of compression

methods: JEK PACK - program packer: LSD PACK - program packer: MEDWAY - program packer: NEWPACK - excellent utility for reducing the size of program files - includes a utility to remove symbol tables that sometimes prevent Pack from working: ONE PART / Ramsaver - creates a new .PRG file from a PRG and its associated resource and data files - doesn't work with all programs: PACK - program packer.

UTI.233: DEPACKERS: DEPACKER v2.0 - Program depacker. Will depack files packed using: Ice 1.0, 1.11, 2.1, 2.2, 2.3, 2.4: Pompey: Automation 2.31, 2.41: Atomik 3.3: Fire 1.0, 2.0: Happy: M-Packer: Jek 1.2, 1.3, 2.3, 1.6: Jam 1.0, 1.4, 2.3, 3.4: Spacker+: Spacker 2 ($ASM): MEGA DEPACK - Depacks packed program and data files. Supports: atomic 3.3 and 3.5, fire V2.0, ice, jampacker, automation 2.3/2.51/5.01, lsd/jek 1.2, pompey 1.5, DCSquish, 4pak, bytekiller, gollum, happy, spectrum-512 and Degas: MULTIDEPACK - depacks files that have been packed using: Atomic, Automation, Ice Packer, Fire Packer, Jam Packer, or Pompey Pirates packers. **PROGRAM PACKERS:** PA PACK - packs programs and desk accessories: PACK and UNPACK v2.0 - program packer: PACK2PRG - program packer: POMPEY - program packer: UNPACK - Universal Program Unpacker. **DISK PACKERS:** ARCDRIVE - system patch which compresses files as they are saved to disk, and uncompresses them when they are re-loaded: MASHER v2.01 - compresses contents of a disk into a file: MSA - Magic Shadow Archiver - converts most standard disk formats to a file: SCRUNCH - Disk compaction program ($PAS): ULTRA101 - Ultra Packer - compresses a whole disk into one file.

Shell, CLI & Deskltops

UTI.221: ASH v0.70 - shell environment (CLI) that supports MSDOS style and UN'X style commands: CLI - command line interpreter: CLI ACC v2.0 - Desk accessory command line interpreter ($ASM): CLI GEM - calls GEM progs from within a CLI ($C): CLINT v1.01 - CLI with pseudo MS DOS environment: ENVIRON - Sets up the desktop environment (path, home, etc for shells) from AUTO folder ($ASM): GULAM v1.03.06.07 - CLI that resembles 'csh' of 'Unix 4.xBSD'.

UTI.222: C-TAGS - ST implementation of UNIX fn: CATCH - Master module for signal handling: CPP - Command Processor Program: ENVIRNMT - sets environment strings: GEMENV - environmental variable manager: JON DOS - user-friendly CLI for those who require a CLI to be as small and efficient as possible - uses less than 24k: JSH v1.60 - shell utility - no docs. KLRCLI v3.0 - Kayelor CLI - based upon the Acorn BBC cli - includes a library file so that commands can be addressed from within C programs (C): NUTSHELL - access your shell (ie. Gulam) from the menu bar ($C): ORC TOOLS - collection of small utilities suited for use within a command shell: PCOMMAND - line orientated shell plus additional batch files.

UTI.223: SCHOLZ - CLI with the usual CLI commands - also supports piping, input/output redirection, environmental variables. Function key macro assignments, and aliases. Documentation is in German: SETPATH - set path environment for the GEM desktop ($C): STARTUP - powerful Batch Startup Programme: SYSTEM 2 - System shell CLI - nicely done UNIX style shell with around 50 built in commands - very detailed (70K) manual on disk: TOMSHELL v0.2 - CLI with a comprehensive set of commands: RSICLI - another CLI.

UTI.236: REPLACEMENT DESKTOPS: GEMPLUS ST - desktop extension that will allow custom icons to be used with versions of TOS below 1.4. Up to 15 different file and 15 different folder icons may be assigned. Icon designer requires colour monitor (Not STE): ICON DESK - Replaces the desktop icons, with custom icons. Up to 10 filenames can be assigned to each of the 256 available icons. Includes an icon editor: ICON JUGGLER v1.2 - icon manager for use with Newdesk (TOS 2+). Imports icons from resource (.RSC), Neodesk (.NIC), DC Desktop (.ICE), and ICN files: ICONE - make your own file icons - excellent package which works well with the Mega ST - but has problems with other STs: TERADESK - Small compact and fast replacement desktop. English program with a Dutch manual.

UTI.237: REPLACEMENT DESKTOPS: KAOSDESK v2.01EG - desktop replacement program with many features, icon editor, lots of icons, and English documentation: INF LOAD - allows different Neodesk.INF files to be dragged to this accessories icon and used by Neodesk's desktop: NEODESK CANVAS v0.8ß - Neodesk desk accessory that loads Degas pictures onto the Neodesk desktop: NEODESK ICONS - 31 sets of icon files which can be used with Neodesk v2.05 and v3: TRASHCAN - Neodesk recoverable trashcan.

Disk Utilities

UTI.213: ANTI VIRUS: ANTIDOTE - Desk accessory virus killer that recognises some standard boot sectors: AV INST - collection of Anti Virus programs for hard drive users: BOOT BLOCK - installs any one of 8 boot sectors onto a floppy disk: BSSS - stores the boot sectors of your disks so that you can restore them in the event of a virus infection: CRC - Cyclic redundancy check - displays the CRC for a file ($C). DCCRC - computes a file's CRC and saves it to disk: DE VIRUS - memory resident anti-virus utility - checks every disk inserted into the drive: EXORCIST 2 - Boot sector librarian - installs special boot sectors onto floppy disks, including anti virus boots. New boot sectors can be added to the database: FLU v1.30 - demonstrates the symptoms of many common viruses: GUARDIAN v1.0 - installs itself then checks for virus on all disks used: HARD GUARD - Hard disk utility to protect against viruses: SUPER Virus Killer - recognises 5 viruses and 136 legitimate boot sector routines - regular updates and a cheap commercial version are promised.

UTI.214: ANTI VIRUS: KILLER - Displays contents of boot sectors: MEGAKILL v1.1 - Virus killer: PROTECT - small virus detect and protect utility: PROTECT6 - small RAM resident program that looks for bootsector and link-viruses: VDU v2.0 - very good Virus Destruction Utility: VIRDOG v1.8 - Small program that checks all disks for executable boot sectors: VIRENDET v2.9 - German virus detector - all options in German (M): VIRUS CHECKER 2 - memory resident virus checker: VIRUS COL - another colourful virus killer (C): VIRUS KIL - colourful virus killer (C): VIRUSKIL - good virus detector which checks on the vectors dealing with floppy operations: VIRUSKIL - virus killer accessory: VKILL v3.84 - George Woodsides highly respected Virus Killer utility - recognises more viruses, and most immunization methods: VTRACE - monitors disk writes to the boot sector ($ASM:$C): XTERMINE - Virus killer.

UTI.224: DISK COPIERS: BIT v3.6 - Bit Eine Bit - excellent PRG and ACC copier/formatter - lots of clever functions and full English documentation: COPY - "multi-tasking" disk copier: COPY FMT - musical disk copy and format utility: COPYDSK - GrapeStomper disk copier (M): DISKCOPY - Copies disks and duplicates formats: FCOPY v3 - version 3 of this famous disk utility - includes rapid hard disk streamer. See our advert elsewhere in this catalogue for details of the commercial version - FastCopy PRO: FLIP - Disk copier with error recovery: HACKN100 - disk copier with facilities for copying some protected disks: MEGA TOOLS: HP TRANS - copies files to and from 80 track 16 sector HP disks: MEGAFORM v2.1 - excellent disk copy and format package: MS TRANS - copies to and from 360KB and 720KB MS DOS disks: PROPLUS - writes out protected disk buffers: RIO COPY - ACC to format up to 82/10: TASKCOPY - (Needs two drives) an accessory that allows you to continue working whilst a disk is being copied, even disk access is allowed!

UTI.225: DISK AND FILE COPIERS: AUTO BOOT COPIER v0.2 - automatically copies files to RAM disk at boot-up: AUTO COPY - copies files to a ram disk at boot-up: AUTOCOPY - copies files to RAM disk at boot up ($C): AUTOCOPY v0.4 - copies files to a ram disk at boot-up: CHEETAH v3 - High speed file copying utility - useful for hard drives: CT - File copying program (TTP) that maintains time stamps on destination files ($C): DCOPY v3.6 - file copier and general utility with archiving facilities: M COPY - disk copier capable of measuring your drive speed, formatting disks, analysing the disk structure and functioning as a sector editor (HEX display): MEGAFORM - copy and format utility: MMCOPY - file copy utility: MULTCOPY - Automatic file copy at boot-up: ULTCPY - Copies files to RAM disk at boot-up: UPLOAD - loads files to a ramdisk at boot up ($C): XAUTO - copy files, delete files, and runs (TOS) programs at boot up.

UTI.238: DISK DIRECTORY PRINTERS: CMPACTDR - Prints a very compacted directory listing (Epson compatible and Deskjet printers only): DCDIRDMP - DC Directory Dump - prints directory contents to screen, printer, or file: DDP v2.7 - Directory Printr - outputs disk directory info to screen, printer, or file: DIR - disk directory utility - handles folders sensibly: DIR LIST - Outputs directories of drives A,B,C or D to screen, printer, or disk: DIRECT: DISKINFO - disk directory to printer or disk - ACC and PRG: LC - lists directories, sub-dirs, hidden files and special files: LI - command line directory printer.

UTI.239: Disk Cataloguers: CAT 3 - Disk directory cataloguer: DIRDRIVE - Hard disk directory sorter (C): DISKCAT - database to create a list of your disk collection: DISKCAT - disk cataloguer with provision for comments alongside filenames: DISKSCAN - disk manager utility - supports hard disks and up to 2000 floppies: DISKTOP - file and disk cataloguer: FFIND v1.2 - Disk catalogue program. Loads disks directories and stores them as a catalogue file. (C): SDDFR v1.2 - Super Directory Data File Reader - converts Michtron Super Directory data files to ASCII.

UTI.240: Disk Cataloguers: STDCAT v5.0b - vastly improved version of STDCAT. Disks may now be categorised, so that disks with similar subjects on them may be grouped together in the catalogue. Excellent utility for organising a large collection of disks: THE MENU v1.0 - Disk catalogue database. Stores filenames and can add/edit comments. Contains useful search and sort facilities with output to printer or disk file ($PAS): UFO - The Ultimate File Organizer v0.9ß- excellent for organising disks - includes some database style facilities.

UTI.241: DISK DIRECTORY PRINT AND CATALOGUE: D D P v2.8 - lists file names, size, date/time and attributes to either screen, printer, or file: DLIB - very comprehensive software cataloguer - will generate reports and labels - uses DBMan - runtime version supplied on this disk: JJ-FILES - disk/file cataloguer: LSIT - lists and sorts disk directories to a text file: PRINTDIR - print disk contents: XDIR - Xdir. The Extended Directory Lister: utility to display contents of drives or folders ($C).

UTI.251: FORMATTERS: FCOPY v3 - version 3 of this famous disk utility - includes rapid hard disk streamer: AFMT - floppy disk formatter suitable for use from within a shell or CLI: CSS Formatter - up to 86 tracks, 11 sectors: CUSTOM - disk formatting program: DC FORMAT v3.02 - Disk formatter which can format MS Dos boot and Spectre 128 formats. Writes good bootsector routines: DFORMAT v2.1 - Diamond Format - Formats 80 or 82 tracks, twisted or normal, and 9, 10, 18, or 20 sectors per track (the latter for high density drives), disks compatible with the Apple File Exchange utility: DUALFORM - produces dual-format disks with a Side 2 folder: EXTENDED FORMATTER - up to 83 tracks 10 sectors: FAST-FORMAT - formats for fast access: FASTDISK - speed up read/write: FASTFORM - formatter that speeds up disk read/write operations: FLOORMAT III - disk formatter and virus killer with lots of options for modifying disks.

UTI.252: FORMATTERS AND FORMAT UTILITIES: DCONVERT - convert disks to fast format: EXPANDER - converts single sided disks to double sided: FORMAT - CPX Disk formatter - standard 9 sector, 80 track, format: HP TRANS - copies files to and from 80 track 16 sector HP disks: HYPERCO - very flexible formatter: HYPERFORMAT v2.57 - excellent formatter with bi-lingual manual: IBM INST - installs IBM bootsectors to ST disks: IBMFMT - Formats 3.5" and 5.25" disks that can be read to by both ST and PC: MEGAFORM v2.1 - excellent disk copy and format package: MS TRANS - copies to and from 360KB and 720KB MS DOS disks: MYSTIC ACC - formatter for standard and extended formats: PC FORMAT - formats disks for PC's: PS2 FORM - formats floppies so that they can be read by PC's: RIO COPY - ACC to format up to 82/10: RITZ - modifies disks so that files on side 1 can be read by SS drives, and both sides can be read by DS drives. ST2PC - makes ST disks readable on a PC ($C): TOXIC2 - extremely versatile disk formatter: ZESTFMT - Disk formatter.

UTI.258: Sector Editors: BED - examine or edit disk sectors, files, or memory: DISKEDIT - very powerful GEM based disk sector editor with extensive documentation: DISKMECH - powerful disk analyzer, archiving and editing utility - create your own formats: DISKMON - Gem-based sector editor: MONOMON v2.2 - powerful disk editor with a variety of functions for examining and modifying disks (M): MUTATE - Memory, sector and file editor - edits sectors over 512 bytes ($C): SECEDIT - no frills sector editor: SVU - good disk sector editor: TINY TOOL2 - re-working of this excellent editor - now supports drives C to P and is less prone to crash.

UTI.259: DISK UTILITIES: BOOT - install any one of 8 bootsectors: BOOTINFO - displays a text file at boot up ($PBS): BROWSE - Utility for moving around directories, and browsing their contents ($C): COPYFIX - retains date stamp

on copied files: DC BOOT IT v1.0 - allows you to run a 'boot disk' from the desktop: DC MAX TRACK - checks how many tracks a floppy disk drive can safely format: DCLOFF - DC Light OFF de-selects the floppy drive, turning the drive's light and motor off. Very handy for hard drive owners who boot-up without a floppy disk: DISKDOUB - stores two single sided disks on one double sided disk: DISKTBOX - collection of utilities - examine and change boot sectors, ex BIOS parameter block, alter execution order of AUTO prg's, wipe FATS and verify floppy: NULLFILL - way around the slow memory initialisation of pre-mega TOS: PINHEAD v2.1 - a tiny program that will drastically reduce the amount of time it takes to boot your computer. PinHead 2.1 works with all ROM versions of TOS: SERIAL - check and edit disk serial numbers: ST MIRROR v1.2 - Creates 2 data files, containing boot, fat and directory sectors, and a root directory listing: ST TOOLS v1.9 - disk utility - very similar to PC Tools. Displays directory trees, list and edit the FAT's, hex dumping of files/sectors/memory, searching, and check/repair/optimise file structures: ST WORM - Auto folder utility to selectively write protect drives/partitions: THE ULTIMATE WRITE PROTECTOR - write protects all disks (hard, floppy, ram). Can be toggled on/off via a keyboard shortcut: WRITE ERROR SENTINEL - displays an alert box if there is a disk drive write error - some programs that do not respond correctly to all drive errors (ARC6.02 and Flash!).

UTI.260: GENERAL DISK UTILITIES: DISK INFO: BOOT SEC - Displays bootsector data - format parameters, volume name, and serial number: BOOTINFO - accessory that displays information about floppy disk in drive A: DCDISKINF v1.0 - Gives a quick representation of the file allocation on a disk: DISK CHART - Graphically displays disk space usage (C); DISKINFO - analyse disk format: DSKCH v3.2a - Disk Chart - displays hard drive partition space with a bar graph and report option: DSX 110 - fast program/desk accessory to view disk statistics: STATS - The Statistician - reports STs memory allocation, disk usage, and system parameters: SYSMAP - Displays system free memory and drive free space. **40FOLDER:** DIRS LEFT - Shows how many more folders can be safely defined: FOLDERXXX - official Atari fix for the 40 folder problem: GEM BOOT - comprehensive fix for 40-folder and associated GEMDOS bugs. **DIRECTORY CHECKERS:** DISK CERTIFY - Checks disks for defects: DSKCHK2 - Floppy disk checker - checks that the disk is intact, displays boot sector information, and whether or not the disk is executable ($C): FILECHK - Checks hard disks for errors and repairs them: FSCK - checks the file system consistency: FSFIX - fixes file systems and put MS DOS parameters in TOS boot blocks. **DRIVE B BOOTERS:** B BOOT - allows ACCs to be loaded from drive B - includes ACC loader and ACC's that have been modified to load their RSC files from drive B: B BOOT - boot from drive B: BOOT - set date, time and boot drive: BOOT B - change default boot drive: BOOT DRV - select which drive to boot from: POWABOOT - Selects drive to boot from: ST INIT - set the floppy boot drive and set the date and time.

UTI.261: GENERAL DISK UTILITIES: SECTOR EDITORS: DISKPRINT - prints disk sectors in ASCII: MEMFILE 30 - disk and memory editor desk accessory. **FAT ACCELERATORS:** FAT SPEED v1.9 - speeds up search for free clusters: SPEEDER - doubles floppy read/write speed: TURBODOS - speeds up disk operations. **DRIVE MAP:** B DRIVE and B INSTAL - install drive B if it was switched off when the ST was booted up: DBLEFEAT - DabbelFeature: disable or enable growing and shrinking boxes when dialog boxes or windows are opened and closed. Will also redirect drive accesses: DCFLPCFG - DC Floppy Configurator - add or remove floppy drives from your system and set the step rate: DIVERT2 - Drive Diverter v2 - allows some "floppy only" software to be used from hard disk: DRIVE MAP - install drives: KILLDRV - Enable and disable hard drive partitions and floppy drives. **COMPARE DISKS:** COMPDISK - Find differences between two disks: DISKCMP - compare and check disks. **DRIVE INDICATORS:** DCFLIGHT - DC Floppy Light each time a hard drive or ramdisk is accessed, the floppy drive 'A' light comes on - who needs fairy lights?: DKLOG - logs all disk input and output ($ASM): INFORMER v1.0 - displays: date/time, free memory, coordinates of mouse pointer, caps lock status, and disk drive activity. Works as PRG, ACC, or from AUTO folder: TIMEDRV - displays current drive and time: TRACKIT - shows side, track and sector currently being accessed (Not TOS1.6). **CACHES:** ACACHE - disk cache program that speed up disk operations: BCACHE - disk cache for drive B ($ASM): CACHEnnn - disk cache from Atari Corp: COLD HARD CACHE v4.0 - easy to use disk caching program that works with both hard drives and floppies: DCACHE - disk cache system with comprehensive control accessory: L-UTILS - permanent RAM disk and disk cache (will share with K-Switch): SCACHE - good disk cache from Moshe Branner.

UTI.262: GENERAL DISK UTILITIES: RPM: DISK RPM - measures floppy drive RPM: SPEED2 - disk drive speed checker ($GFA): ST520RPM - displays speed of floppy drive. **VOLUME:** DIR FIDL - Disk volume labeller and directory renamer: DISKNAME - changes disk label name: VLABEL - change or add disk volume label ($C): VOL v1.09 - add labels to disks, remove control blocks created by the 40 folder bug, and reports disk format: VOLUME - allows disk volume name to be changed. **SEEK RATE ADJUSTERS:** FAST DISK - change disk seek rate: PCF 554 - sets seek rate to 6ms: SEEKSPEED - changes disk seek rate to 3, 6 or 12 msec - useful for getting 5.25" drives to work with an ST: SPEED - set disk track seek rate: STEPRATE - ACC and PRG to change drive step rates ($C:G). **SECTOR UTILITIES:** BOOTGEN - maintains disk sectors: CERTIFY - disk tester ($C): CHANGES - increase storage space on disks by changing cluster size: CHK v2.3 - and CHK SHELL check, map and restore disks: DLII - Check disk, un-erase, disk edit program plus re-organize disk contents for faster access (Simon Poole): DSK VFY v1.2 - Verifies a disk: ENGINEER - disk analyser with facilities to format disks (1MB:M). **VERIFY:** F VERIFY - select verify flag: NOVERIFY - switches verify off: TOGVERFY - toggles verify flag: VERIFY - toggle disk verify ($ASM): VER OFF - verify off. **FORCE MEDIA CHANGE:** DRIVEMOD - fix for floppy drives that do not detect disk changes: FMC - forces a "Media Change" so that the ST will always read from a disk before writing to it. Overcomes the problem with some disk drives (and TOS versions?) that do not detect when a disk is removed: MEDIA - Desk accessory to force the ST to re-read the floppy drive before wring to it.

Hard Disk Utilities

UTI.255: HARD DISK BACKUP: BACKUP - Backs up individual files - performance is similar to creating incremental backups, although the program updates any files on disk that have been altered since the previous backup: BAKTRACK - automatic backup for Tracker/ST: FILE RESTORE - Restore or copy complete folders: HARDUP - Hard disk backup utility: MEGAMIN v2.1 - Backs up hard drives at a speed of upto 1 Meg per min. ($C): TORTOISE - fix for Turtle and TOS 1.4.: TURTLE v3.20 - latest version of George Woodside's excellent hard drive backup program.

UTI.256: HARD DISK UTILITIES: AUTOVER - examines hard disk and warns if it finds problems that should be fixed by Hard Disk Sentry (from Beckemeyer Development): BOOT TYME II - writes time-out information to drive A floppy, at boot-up system will boot only when hard drive is ready: BOOTWAIT - stalls the ST from booting until the hard disk has got up to speed: BYTEFREE - rapid check of free space on a hard disk: DC NO STIC - Prevents hard drive heads from sticking by moving the heads every 5 minutes: DUCK v3.1 - Waits until the hard drive spins up to speed before booting up: HANDY WIPE - performs cold boots until hard disks autobooter takes over ($ASM): HARDAUTO - runs files in Drive C at boot-up: HD CHECK v1.3 - Hard drive testing program: HD UTILS - hard disk utility: HDTOOLS - very fast partition copy: HDACCEL - Accelerator: HDINFO12 - renames hard drive icons to reflect the amount of free space available on them: HDWBOOTB - Writes a special boot-sector to a floppy, for non auto-booting hard drives. ($MOD2): LIMIT - Limits hard drive icons for Supra and ICD drives: NOROACH - sets the time TOS will wait before trying to boot from hard disk on a Mega STE or TT: PARKIT - ACC to park heads: RATE HD - utility to compare performance of hard drives - transfer rate and average access times: RE BOOT v1.2 - waits a set amount of seconds before re-booting: REORGHD2 v1.003 - Hard disk reorganiser. Copies a hard disk partition to a ram queue, and then back to the partition: SCSIBOOT - Fixes double-booting syndrome with some SCSI hard drives: SHIPACC - hard disk heak park. Works as either Acc or Prg: SUPICD Fix - drive bits fix.

UTI.257: HARD DISK DRIVERS AND BACKUP: AHDI v5.00 - Atari hard drive utilities - features a more compatible command set, so should be able to format most drives including Quantum Pulse drives. Supports partitions greater than 16MB, but the ICD/Supra extended partitioning scheme is not supported: BACKSHELL - Back up and restore programs - for use with Backup/Restore.TTP: BACKUP - simple hard disk backup utility: BACKUP ST v1.0 - hard disk backup program with a wide variety of options, and a GEM interface that makes the use of the command line a lot easier.

Home & Business Utilities

UTI.218: PERSONAL ORGANISERS: AGENDA - Diary program to keep note of important dates: ALMANAC v2.0 - Enhanced diary program that stores lots of information linked to dates - data files include information about national holidays, historic events, and such like: CAL v6.3 - Very well implimented Calendar desk accessory. Cal lets you attach events to any day of the year, either by date or according to a days position in the month. If any significant events are scheduled for the day, Cal displays an alert: CALENDAR - Personal appointment calendar - prints a calendar of events.

UTI.219: PERSONAL ORGANISERS: DATEPLAN v0.2 - keeps notes of appointments etc: DIARY v1.0 - up to 20 pages of 20 lines by 80 columns per day: FLOPPYFAX - very good 'FiloFax' style package - includes: Calendar and Appointments, Address Book, Note Pad and Database - this version does everything except print - full version, which includes a bank account manager, is available direct from the author for £10: MAKE A DATE v1.5 - allows you to organize and store appointments, reminders, a TODO list, a phone numbers and general notes: PERFECT TIMING - ACC calendar, diary, notepad, and appointment book: REMIND - event reminders at boot-up: REMINDER - creates a data file of important dates, such as birthdays, and warns of imminent dates at boot up: SCHEDULE - Creates a weekly schedule of events: TELEFON NUMBER - telephone number database. Reads the data from an ascii file: WROTE TO - keeps track of your correspondence.

Databases

UTI.212: ADDRESS BOOKS: ADD BOOK v0.2r - Address database - ACC and PRG: ADDRESS BOOK - organiser for names, addresses and telephone numbers: ADDRESS BOOK v0.1 - Address book database for up to 50 addresses and telephone numbers: ADDRESS DATABASE v1.4 - holds 400 addresses together with phone numbers, phone number fields can be used to dial numbers with a modem - easy to use (C): C-MAIL v3.0 - Mailing lister - stores and retrieves addresses and personal information: COMPUTER ADDRESS BOOK v1.0 - Simple address book: MAKE A DATE v1.5 - allows you to organize and store appointments, reminders, a TODO list, a phone numbers and general notes: STREET FINDER v1.0 - Address book database - accessory and standalone versions.

UTI.242: DATABASES: AREA CODE - North America telephone area codes database: CARD-ST - single index database - useful for keeping (and finding!) notes: CONVERT 4 - for converting between different data formats. Supports: B.Base 2, Super Card 1 and 2, ASCII, 1st Word (Plus), and 1st Word Mail Merge: DATA CAT - Database: up to 12 fields, search any field, and easy to create a new database. (C): DATABASE v1.3 - fairly simple database with few options: DB MAN - tutorial texts on using this rare commercial database.

UTI.243: DATABASES: BDB 12 - Tim Early's Book Database version 1.2. GEM library database with many features for ordering, sorting by author/series etc. Full report generating functions: CINEMA - Cinema/Video film database (C): DATABASE - Nice quick database program with its own file sector and a facility to encrypt data: DRUGS DATAFILE - Supercard database file which contains a list of over 2200 brand named drugs together with brief details. Supercard 1 included: FB2 - database package - simple and powerful - includes a utility to automatically create a data file of files and disks - a rapid and flexible package for creating a disk database.

UTI.244: DATABASES: DATA HANDLER v3.1 - database with up to 8 fields, search, sort, add, delete, and print. Plus a utility to put a list of files downloaded from Genie into a database file: DATASTORE - fairly flexible database with report functions, can be awkward to access: FILE MASTER - very easy to use database program - 16 fields and 40 characters per field (aka SBASE!): FLEXIFILE v2.51 - Files with up to 20 fields can be created: FOODBASE - dietary analysis: FREEBASE -

memory resident database - small but quite well featured with a mailmerge facility (Not TOS1.6): GROUPER - simple user group database - small database program for storing names and addresses of contacts/user groups: ENTERTAINMENT FILES - Database for recording details of music singles, albums, cassettes, CD's, videos, and films (C).

UTI.245: DATABASES: HYPERBASE - hypertext style database. Very easy to create an information system, using both text and pictures: INVENTORY Professional - simple and efficient inventory system - produces reports and product labels: MEMBERS - Club/Society membership database: RECBASE v1.1 - purpose built record database for storing information about tape, CD, record, DAT, etc recordings. Maximum of 200 records in database (M): SONGFILE - record/music database.

UTI.246: DATABASES: ST CARD - Hypertext system for the ST - sample cards included - needs a RSC file editor such as K Resource in order to write new cards and stacks ($C): ZAPCARD - very nice index card style database.

UTI.247: DATABASES: TCOS v1.2 - card index style database. Records are created on cards, which are then linked together to form a hypertext style system that can include graphics as well as text: TCOS STACKS - data files for use with TCOS: 50 STATES - Information about states in the USA. ANIMALS - facts about animals. COUNTRIES - facts and figures. TIME WORK - Examples of timed events such as time taken for light to travel from Sun to Earth: SUPRCARD - Super Card 1.3 - excellent, flexible database.

UTI.248: DATABASES: MEGABASE and MEGA MAIL - database package written in STOS (C:Not TOS1.6): UGBASE - User group database. Keeps information about user groups members - addresses, computers owned and misc info ($C): VIDBASE v1.1 - dedicated video tape database. Maximum of 200 records in database (M): VIDEO MANAGER DATABASE v4 - handle your collection of video tapes - not very robust, doesn't display disk directories, and wild cards are not allowed in searches.

Astronomy Utilities

UTI.215: ASTRONOMY: ASTROCAL - Astronomical calendar - calculates moon phases, eclipses, sunrise and sunset, equinoxes and solstices: SUN MOON - calculates sunrise, sunset, moonrise and moonset for any location, and time: THE ASTRONOMER - generates star maps and charts ($PAS).

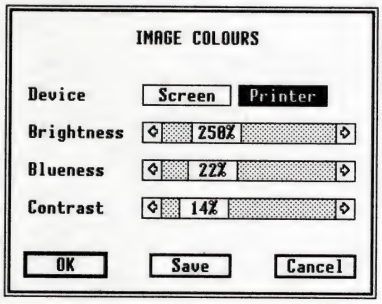
UTI.216: ASTRONOMY: ASTRONOMY - Calculate position of sun, moon, and planets, from any location and time - includes an editable database for popular locations: NORAD - satellite movement monitor - database of about 50 satellites: STAR 2000 v1.0 - database of 2000 stars and celestial objects which will plot sky maps and Hertzspring-Russel diagrams. SUNCLOCK - Animated daylight and time-zones:

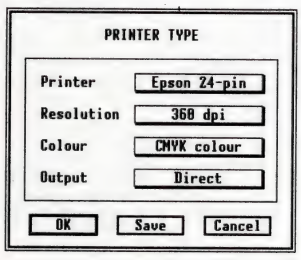
ST Club Disk Mag

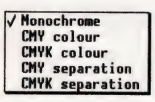
DMG.32: ST Club Disk Mag November 1992: CHCACHE - Cold Hard Cache 4.0 - Cold Hard Cache is an easy to use disk caching program that works with both hard drives and floppies. CHROME - PHOTOCHROMEv2.01 - Loads most IFF formats, 24-Bit QRT and REAL-3D Raytraced screens (16 million colours), and VidiChrome digitised 'RGB' colour separations (4096 colours) and converts them to one of six powerful screen modes. Displays Super HAM - 4096 colours out of 4096 - on an ST or STE, and STE PhotoChrome - 19200 colours out of 32768 - on an STE. CLIPBORD -Atari Clipboard CPX and ASCII reprint of the Atari Clipboard Standard. FGDOSDOC - A User's Guide to FontGDOS from Atari Corporation. FPCU22 - File to Pack Converter (FPCU) Version 2.2 - allows you to quickly select a directory of files and pack each selected file into a separate compressed file.Can use STZIP, LHARC, or ARC to do the compression. GNUCHESS - GEM version of GNU Chess. GODEL - an intelligent mathematics processor which can do arithmetic, solve equations, plot graphs and even knows calculus! G_MAP - Hard disk mapping program from Beckemeyer Development. ICON - Icon Juggler - lets you create sets of icons for Atari's NewDesk. MACREAD -Mac HFS Disk Reader - reads files from a Macintosh formatted scsi/dma hard driver or a SpectrE formatted (HFS) floppy disk. MED_BOT - installs an executable bootsector that will switch over to medium resolution. MINESW - deduce the position of these highly explosive devices in a grid of squares. MINIDRAF - drawing package. POOLFX92 - Yet another release of this TOS bug fix - source code included. RUBRICKS - multi-feature screen saver. SCROLFIX - Fix for the (TOS 1.04+) system bug that can cause some windowed programs to scroll twice when you click once on a window scroller. SEBRA - High-Res Monochrome Monitor Emulator. SERIALFX - Serial Fix - upgrade to the old TurboCTS program to fix the old RTS/CTS problem which can occur when a high speed modem is used in conjunction with ZMODEM. SPC3375 - STe Spectrum picture file viewer - displays .SPS, .SPC, and .SPU format pictures in 3.375 colors. STFA - text-speeder for GEMDOS screen-text-printing routines - accepts all VT52 emulation commands. STZIP - STZip version 0.7 compresses and uncompresses PK ZIP compatible files. THE_ULTM - The Ultimate Write Protector - write protect drives with a pair of keystrokes. TITED067 - Little utility that let you read and print an ASCII file with a GEM window. It can be used as an application or accessory. TURBO_QZ - Turbo Qz File View - memory resident text file viewer to replace the GEM Show/Print/Cancel routine. UNLZH.PRG and UNLZH.DOC - program and documentation to unpack these LZH files. ZAPENU - a replacement for launching programs from the desktop.

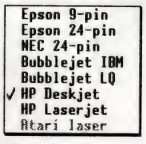
Order form and price list for these disks is on page 57

Imagecopy Colour









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The latest version of Imagecopy allows you to print colour images on a dot-matrix or inkjet printer. Colour images can be printed in any of the standard printer resolutions, and colour quality can be adjusted to increase the brightness, blueness and contrast of an image. If you don't have a colour printer, Imagecopy can print colour separations which may be superimposed to produce a full-colour image. In addition, the colour facilities can be used to improve the print quality of colour images which are printed in black and white.

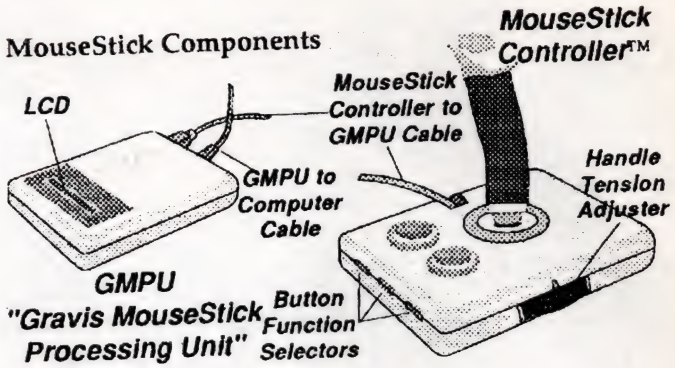
Resolution options have been extended to offer an extra resolution for 9-pin printers (72 dpi), and another extra resolution for 24-pin and LQ bubblejet printers (60 dpi). The Laserjet slot contains two extra resolutions (200 and 600 dpi). These should work with the new HP Laserjet 4 printer.

The Colour menu offers five choices: Monochrome, CMY colour, CMYK colour, CMY separation, and CMYK separation. The colour separation modes can be used to print full colour images from a monochrome printer.

Because images normally print darker than they are displayed on screen, you can use the Imagecopy brightness setting to compensate for this. If your printer information specifies a 'gamma correction value' you can convert this to a brightness setting. The brightness setting can also be used to improve the way that colour images are printed or displayed on a monochrome printer or monitor.

A Blueness setting is available to compensate for the fact that colour printers sometimes print blue with a purple tinge. The Contrast setting increases the contrast between light and dark colours.

Advanced GRAVIS MouseStick™



Surely joysticks are for games - what's a review of one doing in ST Applications? Ewan Haggarty describes his use of a very serious joystick indeed.

A Confession...

Perhaps I should come clean first. As a ground-bound pilot my purchase of a Gravis MouseStick was initially so I could better enjoy Flight Simulator II and Proflight. After having had a go with one at the RC Simulations stand at an all-formats computer show (admittedly connected to an Amiga) it was an instant must-have: the smoothness and controllability given by the MouseStick to these already highly realistic flight sims is truly amazing. What I had not anticipated was the MouseStick elbowing my Naksha out of the mouse port permanently - almost.

Bits & Pieces

The MouseStick is a chunky affair in two near-Atari grey components. The Gravis MouseStick Processing Unit (GMPU) plugs into the mouse port itself, (NOT the STe analogue ports as ST Format would have you believe) and is about the same height and width as an external 3.5" drive but about $^{2}/_{3}$ the depth. The MouseStick itself connects via a very long cable to the GPMU, and has a large 6.5"x5"x1.5" base with a 4.5" tall rubber sleeved handle.

What It Can Do

The MouseStick has two basic modes - emulating mouse input in many sub-modes, and emulating an auto-fire switched joystick. Joystick spring tension is adjustable from nil to mousetrap springy in eight stages by rotating a large wheel set in the base - I find the second setting suits me for all my uses.

Thumbwheels on the MouseStick body configure which of the upper, lower and stick buttons act as standard mouse left and right buttons, and which acts as the GMPU 'priority' button. The GMPU has a large LCD alphanumeric display that displays status, menu-level and configuration messages. Programming the MouseStick is a simple matter of rattling the 'priority' button rapidly at least four times and then holding it depressed until the 'ENTER EDITOR' message is displayed on the GMPU. Wiggling the stick within the arc towards you brings up six messages heralding entry to the various sub-menus and functions available. Pressing a MouseStick button selects the displayed option, which could be one of four user-defined configurations (including the default 'STARTUP MODE') stored in the E2Rom within the GMPU.

Operation

Joystick-wiggling through these options very quickly becomes second-nature, and is aided by a well written 70-page booklet and a reference card giving a diagram of the hierarchical tree of the available options. So what options are available? Without going into a regurgitation of the manual, for the flight sim fanatic, the MouseStick sensitivity can be minutely adjusted to give the optimum response. The size of the 'null zone' - the central region where the stick movement does nothing - can similarly be sized. For the game player, the MouseStick can emulate a switched four or eight-way joystick with auto-fire period adjustable in 0.1s steps up to a maximum interval of 5s. This could be useful for the 'family computer' that has to run serious applications as well as junior's games, as the MouseStick is of exceptionally robust construction, yet can be configured for serious desktop use.

But Is It Serious Hardware?

However, it is as a mouse substitute that the MouseStick really shines. Mine is blu-tacked to the right-hand corner of my workbench, occupying much less space than a mouse mat, and is immune to the swamp of encroaching paper that would frustratingly trap the mouse or snag the tail. I hold just the top of the MouseStick in a pincer grip between my thumb and middle finger with the index resting on the stick button which is configured as the left mouse button. The top of the stick is contoured for this, and feels as natural as holding a pen. The MouseStick 'Auto Centring' mode and mechanical springing means that the cursor always returns to the middle of the screen whenever the stick is released. This might not seem a real advantage if you have not experienced it, but that is where most dialogue boxes pop up, and you never have to waggle the mouse about to find it amongst a mass of text as you know where it is going to reappear! Consequently, accessing the menu-bar or any other part of the screen becomes a much more co-ordinated and slicker affair. For word processing and DTP the very slight rectilinearity imposed by the springing of the MouseStick aids in the accurate drawing of frame boxes, whilst the control in doing this feels very much more like drawing by hand than wheeling a mouse about does (in my opinion anyway!)

The one failing the MouseStick has is that it cannot be used for freehand drawing. Even with the spring tension wound completely off, there is the tiniest play in the stick mechanism - no more than a few pixels-worth - that puts right-angle bumps into any curve drawn past a tangent to a stick axis. You just have to resort to the rodent if you have to freehand draw when tidying up a scanned image, yet for any other type of cleaning-up the accuracy of the MouseStick makes individual pixel-punching or line drawing at least equally as easy as using a mouse.

Conclusions

I have found the MouseStick an easy to use and thoroughly well thought-out piece of hardware. In all other than drawing lines freehand I consider it far more versatile and easier to use than a standard mouse, as well as being extremely robust. If you are in the market for a replacement mouse and sometimes need to use a switched joystick on port 0, or are simply a messy person, give the MouseStick a serious look.

Product:	Gravis MouseStick
Price:	£70.50
From:	RC Simulations Unit 1b Beehive Trading Estate Crews Hole Road St George, Bristol BS25 8AY
Tel:	0272 550900

ADI Educational Software

from Europress

Review by Terry Freedman

Anyone who reads the other ST magazines may have noticed that a great deal of excitement has been generated by the latest offering from Europress - ADI.

Europress made a rod for their own back many moons ago by making their famed product Fun School so good! Like every other educational software producer, everything they do now is bound to be compared to the Fun School range. Perhaps a new rating system based on a measure called the Fun School Index (FSI) needs to be invented.

So how does ADI compare with Fun School?

Europress have (wisely) gone for a very different approach in the ADI range, making direct comparison difficult. The main differences are that ADI programs have a central theme, such as Maths or English, and that the learner has been taken into account; more of that later.

The approach of ADI is to use a friendly alien - ADI - to guide you through the various aspects of the program. The alien looks uncannily like ET, which unfortunately dates the program from the outset. ADI the alien makes faces at you, makes noises, and generally tries to encourage you to try again or try harder.

Each ADI package contains a number of options:

Select "chat" and you can write down your secret thoughts and, if you like, share them with a friend - but only if he/she knows the password you've assigned to the documents.

The work section gives you access to the application you want to work on, and contains tools such as a notebook and a calculator.

Select "play", and you can play a ballzone-type game. The clever thing about the games section is that it is linked to the work section: you get more choice of games as the score on the exercises goes up. In this way, youngsters are encouraged to do the exercises in order to be able to play more games, and then they can play games as a reward.

This is an interesting way of attempting to use the fact that kids like a break sometimes, while attempting to prevent them spending all of their time playing games. However, apart from the fact that there is nothing to stop a child exiting the program and loading up a far more interesting game than the basic one provided, there is a rather more disturbing thought here. I'm old-fashioned enough to believe that lessons and their subject matter should be interesting enough to grip the learner's attention. By providing games within ADI, Europress are implying either that the programs are not interesting enough to stand on their own, or that the average user of the program needs a game to take their mind off the gruelling lesson.

Now, in the case of the Maths programs, that would be a fairly accurate assessment. While they cover everything - and more - that is specified in the National Curriculum at the appropriate levels, the language used and the type of questions asked are quite difficult. They would certainly require an adult present to help the child get through the exercises and the explanations.

The English packs are, in my opinion, much better, being much more imaginative. In the section on verbs, for example, there are a number of exercises of various types which test the child's knowledge and understanding of verbs fairly thoroughly.

Also, there is a book icon which, when you click on it, presents you with interesting information, such as a brief synopsis of the life of Sir Walter Raleigh.

There are certain elements which are common to all the programs. Apart from the use of ADI and the Work, Play and Chat options, the general feel of the programs and the layout on screen are all similar. This is good because it means that the child only has to learn how to handle the program once, not four or more times.

The child will also pick up the fact that commands can be executed by pressing a key or by clicking on an icon. The use of icons is not always an option, and this sort of inconsistency diminishes slightly the friendliness of the programs, since it can lead to mild confusion.

The exploration aspect of the programs is good too: by clicking on various areas of the screen you can select which area of the topic you want to study. There is possibly a slight danger that higher levels on the screen will be interpreted by the child as higher levels of difficulty, but the observant parent can soon set this straight.

One of the most interesting aspects of all of the programs are the animated sequences, such as the blood flow diagram, and the formation of a volcano. I'd like to see these developed or added to, or perhaps made rather more interactive.

In conclusion, the ADI suite represents a bold attempt to develop educationally viable programs while breaking out of the Fun School mould. The English ones are somewhat more successful than the Maths ones, but nevertheless, taken as a whole, they represent very good value for money.

Points For:

- ✓ Friendly interface, which remains the same for all programs in the range
- ✓ Variety of activities
- ✓ Built-in incentives to improve

Points Against:

- ✘ Not always clear whether to use mouse or keyboard
- ✘ Maths programs are on the complicated side

Product:	ADI Programs
Supplier:	Europress Software
Tel:	051 357 2961
Price:	£25.99
Age Range:	11-12; 12-13
Manifest:	2 disks, manual, boxed
System:	All colour STs, STEs, and Mega STEs

Timeworks Desktop Publisher

User Guide

260+ pages for £9.95 from the ST Club

At last: a users' manual written from a user's perspective. The author, David Smith, a dedicated user of this versatile package, has learned through experience, and trial and error, how to produce remarkably professional results. This book aims to pass this knowledge on by introducing the basics in such a way that each new feature builds on what has gone before, to form a kind of "learning curve".

The book is full of innovative ideas to produce newsletters, C.V.'s, posters, reports, theses or indeed a professional book (as the guide itself demonstrates). Each feature is explained in easy-to-follow, step-by-step instructions that every novice will appreciate.

Topics covered include: the installation process, setting up a document, importing text and graphics files, special effects, and an extensive section on installing and designing fonts - to make your work really stand out from the crowd. There are numerous worked and visual examples throughout the text.

Page Assistant

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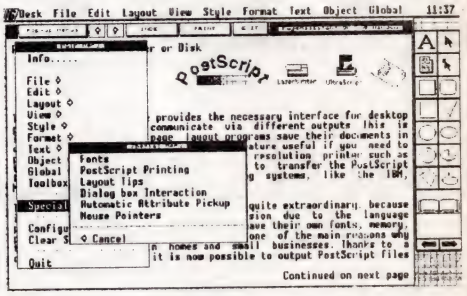

- Includes an online index.
- Applying before and after paragraph vertical spacing.
- Anchoring text around irregular graphics
- Adding colour to black laser type.
- Creating initial capitals.
- Creating pullout text blocks.
- Resizing objects proportionally.
- Using master pages.
- Manipulating graphics.
- Digital half-toning.
- Online help for all commands.
- Defining object centre.
- Using vector and bitmap graphics.
- When to use .PS and .PSF files.
- Printing with UltraScript
- Layout tips.
- Picking up text attributes.
- Send summary to printer for hardcopy reference.
- Tutorial on colour separation.
- Includes a 52-page manual packed with tutorials on how to master the macro command, design textual and graphic effects (such as rotating objects in a circles, place text on a path, etc), layout tutorials and much more.
- Resolution independent.
- Easy installation.
- Run as an accessory.

Coming soon: CalAssistant SL

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Nottingham
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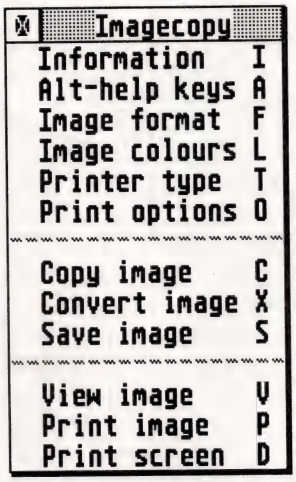
Imagecopy

- Copy images from screen and save them in IMG, Degas or RSC format. Images may be copied by pressing Alternate-Help, allowing you to capture images when the Accessory menu is not available.
- Flexible rubber-banding system which allows images to be selected with a fine degree of accuracy.
- Copies images from both standard and large screens (including virtual large screens such as MonSTer) in any of the normal ST/TT resolutions except TT low resolution.
- Convert images to different formats. Imagecopy reads images in IMG, Degas, NEOchrome, Art Director, and Tiny format, and writes images in IMG or Degas format.
- View images on a monochrome or colour monitor (colour images are dithered on monochrome screens). Up to four images may be displayed simultaneously.

Imagecopy is supplied as a desk accessory and as a stand-alone program. A fully illustrated manual is included.



- Print images and screen dumps in a variety of resolutions on a range of different printers, including: 9-pin or 24-pin Epson-compatible dot-matrix printers, Bubblejet printers, and Deskjet and Laserjet printers. Print speed is much faster than normal GDOS output.

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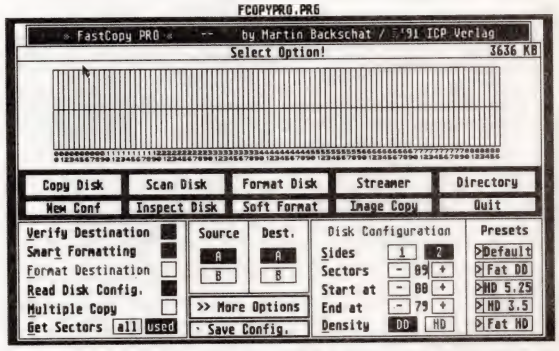

The latest version of the number one ST disk duplicating software takes the concepts and features of FastCopy 3 and pushes them to the limits.

Features include:

- Copy disks: Only formats when required, Only reads those parts of a disk that contain data, Full verification, Intelligent handling of read/write errors.
- Format disks: Format up to 86 tracks and 11 sectors per track; MS DOS compatible disks.
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- Works at 8MHz, 16MHz or 32MHz on ST, STE and TT.

Supplied with a ring-bound manual, FastCopy PRO' is the ultimate disk tool for all ST users.
FastCopy PRO is copyrighted and --not-- PD!
See our order form on page 57

£24.95

Grafix Arts

Paul Keller

TECHNIQUE – Highlights

Pictures which look a little flat and dull are normally pictures that have not properly utilised the light source available, light being a very important part of any picture. The light source of your pictures will often be varied as to position, brightness and colour, and the area upon which this light reflects greatest of all is called a highlight. (It is generally an area of most prominence or the most outstanding part.)

When used correctly it can bring a kind of life and movement, giving the illusion of three dimensions to your picture.

The direction of the light source must be taken into account, and also the radiance and colour produced from this in any picture you create.

A moonlight scene for example may contain many black and white highlight areas, but many artists will use a blue in place of the white and grey areas of highlights. This versatile use of colour makes for much more interesting pictures and dosn't take away any prominence from the white moonlight source.

Another common case of this versatility could be where a subject is near a fire: the play of light upon the subject in the way of reds, yellows and whites can be used to create astounding colour highlights. In this use of colour highlights a computer comes into its element. It is so easy with most art packages to change one range of colours to a completely different set! E.g. the moonlight scene could be easily changed to a sunset scene just by changing the colour palette to a more red/yellow selection instead of blue/cyan/white. (Colour palettes mentioned last month.)

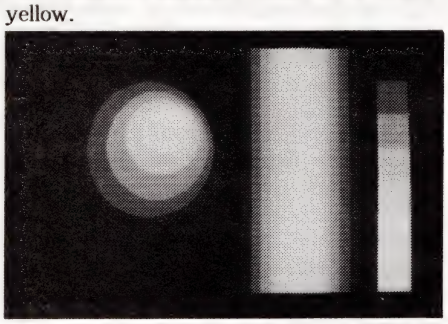
From non-natural light sources, e.g. a lamp, the play of light follows the same rules as above, but some difficulty might arise where more than one light source is effecting your picture at the same time. When this is the case you will have to be discriminating as to the placing of the more prominent highlights or the picture could become lost, and the over-use of the highlight starts to negate the effectiveness of your picture.

Colour absorption

As you all know, when light hits an object the resulting effect is not only dependent upon the light source but also upon the subject's absorption and reflection of this light and how we then perceive this image with our eyes. E.g. a lamp reflecting on a metal tube could also set off a reflection on some other object from the very reflection of the metal tube. In such a case we would see more than one reflection from just one light source. (I will be covering reflections in more detail in a future article.)

Effects such as sparkles can also be made to make more interesting highlights. On the ST(E) in low resolution colour mode, for such sparkles to be effective depends on gaining a point on the end of the lines they use (see point PIC 1). This point is made as a form of anti-aliasing between the object line and the background but is more greatly enhanced to form the illusion of a finer detail than is actually possible on the ST computer. The more shades of contrast used the finer any such point seems.

The building up of such highlights is important (see bar PIC 1). By use of a dark shade large area ranging to a smaller brighter area we gain our highlight. But for this to stand out the lightest smallest point must be the brightest part of the picture. I always tend to use white (7,7,7)ST or (15,15,15) STE, but this is by no means essential or always practical. Eg. for a sunset your brightest highlight could be a bright yellow.



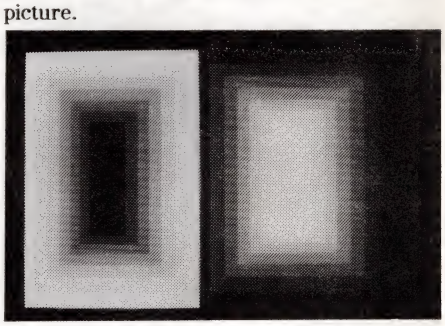
Showing in ZOOM some different highlight techniques such as SPOT, BAR and POINT (normally 1 pixel width).

Darklights

These are the opposite to highlights and they are formed in the reverse way to highlights. They can be just as important for depth and perspective to some pictures, and if used in conjunction with a highlight you can start to achieve more realistic 3-dimensional images than a picture with just highlights on its own. Some people think of darklights as shadows but they are very different in the effect they produce.

Whereas a highlight stands out by use of the brightest colour, a darklight relies on the darkest colour available. I nearly always use black (0,0,0), but again some artists tend to use a very dark blue in place of the black - it's down to personal preference which colour you might use (see darklight PIC 2).

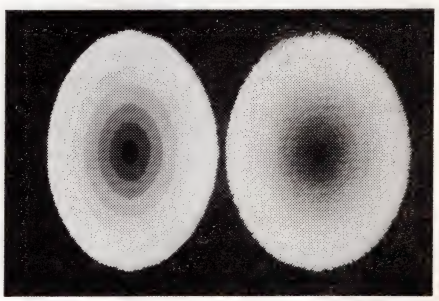
The best use for darklights is for the drawing of pits or tunnel effects, giving the impression of going inside the picture, as opposed to a highlight which gives the impression of being projected outside the picture.



Showing in ZOOM the layering technique for both darklights (left), and highlights (right), normally 1 pixel width.

Diffused highlights

These I mainly use where I have a lack of shades of a particular colour or when a large area looks too plain and lifeless. The effect is best achieved by use of airbrushing the area to be diffused. A small nozzle and slow speed is preferable for good control. The diffused effect is gained by layering each boundary with the next shade up, in terms of brightness, and working into the centre of the highlight (see diffused highlights PIC 3).



Left: layered darklight; right: diffused darklight, similar to the left but airbrushed to smooth the boundaries.

Next Month: Shadows

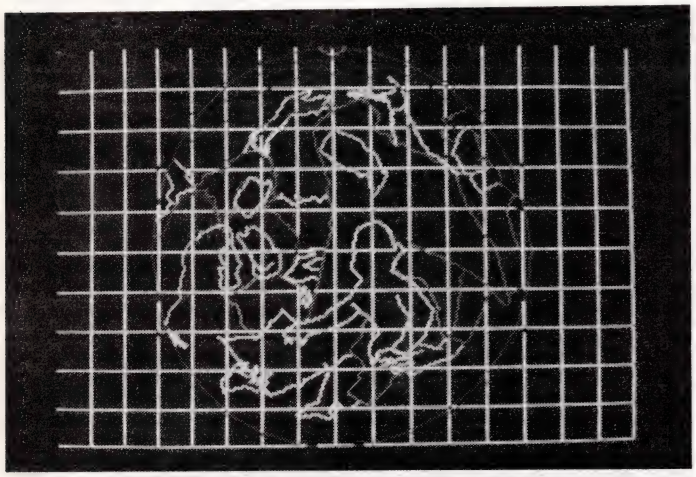
On the box

MADONNA OF THE MAGNIFICAT

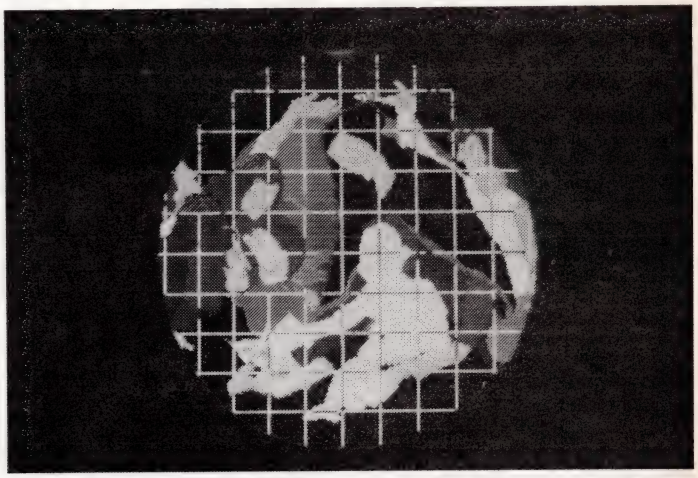
INTRODUCTION

This picture is based predominantly on Botticelli's 'Madonna of the Magnificat'. Its vibrant colours bring a kind of life into the picture. I wanted to re-create this picture because of the challenge the conversion of any such picture into 16 colours represents.

The use of a larger global palette of shades the STE offers (4,096 colours) would have been useful to give even more lifelike flesh tones and more colour highlights to such a picture. It was created on an STM with the art package 'CANVAS'.



(1) Madonna of the Magnificat offered inspiration for this time of year. A colour palette is very carefully selected by observing the main colour composition of the picture and assigning the most amount of shades of colour in order of priority. The size of this reference was about 125% scale to the computer screen. A grid was drawn using Canvas's 'GRID' function. Using the ZOOM mode of 'Canvas' exclusively and 'DRAW', I drew the main outlines of the picture in their main base colours. When working in CANVAS'S 'ZOOM' mode I always use the grid as a point of reference when drawing.



(2) Here I filled the outlines with the base colours corresponding to their colour outlines. This stage of the process is done in normal screen mode using the 'FILL' command. From these colours I rearranged the palette to give me more accurate shades of colour. Also at this stage I zoomed into the picture to carry out detail work on certain parts of the picture. Again the palette was changed to suite the highlights needed. I kept the grid as a lot more detail is to be added, and it is only removed where I no longer needed it. The rainbow type pattern near the top of the screen was created using the 'ARC' command and then filled.

TOOLS – Patterns

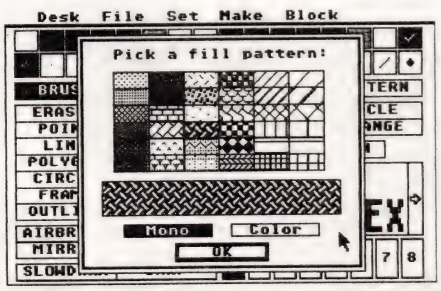
This tool is found in most ST computer art packages. Its main use is as a form of shading, by use of the 'fill' mode. Normally at least 36 such patterns are available as standard. There are several types of pattern, the dot, grid, square and miscellaneous. If you look carefully at the dot patterns in the first column (from top left to bottom left), you will see that they are actually ranged in order of tone (light to dark). There are 7 such dot tones (8 if you include the main filled fill pattern).

These tones are best used for bar chart or pie chart divisions in high resolution black and white mode. For colour purposes they could be used in a more advanced way by using them only with colours of a similar shade. E.g. the fourth pattern down selected as red (7,0,0) placed over a (6,0,0) red background would produce a (6.5,0,0) red (illusion only). The cross hatch pattern has often been used in this way to give the impression of more colours. But if not used correctly it can spoil your picture.

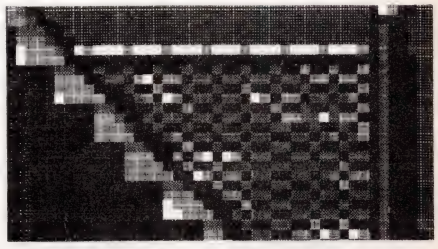
If you really want to use such a pattern in your colour pictures I strongly suggest that you do not leave them un-touched; but break them up by altering the pattern in places, making it look more random.

The grid patterns could be used as scales for your graphs or your pictures, perhaps to create paving slabs or a wire fence etc.

Only two chequered patterns are standard but can be great for kitchen tiles & 3D shapes. Out of the miscellaneous patterns there are the obvious brick patterns for wall, roof or scale patterns and my favourite is the basket weave or wool pattern.



A pattern selection box from 'DEGAS ELITE', showing the 36 predifined patterns available.



Part of the LEONARDO picture showing the roof tile pattern used. Also the wall pattern to the left can be seen.

As well as these patterns most art packages allow you to define your own designs, so you shouldn't be lost for choice! The pattern tool is a great time saver wherever a pattern needs to be repeated. (Refer to Leonardo (3), Issue 23 of ST Applications.)

Next Month: Rays

LAST WORDS

"Everything changes, even stone."

Claude Monet

Are you sometimes annoyed and frustrated by the way Public Domain programs are written?

Andrew South was, and, in an attempt to improve standards, offers:

Ten Rules For PD Programmers

1. Write your program so that it works in one resolution only. To make it more fun for the users, don't let on which resolution is needed - after all, they've got a one in three chance of getting it right. If the program is started in the wrong resolution, don't give any message: simply return to desktop.

2. However much you test your program, be sure to leave at least one menu selection or keypress which causes bombs (or, better still, locks the computer up completely). Users have come to expect this feature; indeed, a number of commercial programs now include it.

3. If you use GEM menus, do be as innovative as possible. Never succumb to the temptation to follow the herd and put the File menu next to the Desk menu - why risk boring the users? Try to find somewhere really interesting for the Quit option: halfway down the second menu from the left is often recommended. Unless it is essential to do so, do not offer any keyboard alternatives. If you should be forced into this position, make them at least as original as your menus (and, of course, unconfigurable).

However much you test your program, be sure to leave at least one menu selection or keypress which causes bombs (or, better still, locks the computer up completely).

4. As you know, every user has a single internal floppy disk (drive A:) and never has any desire or inclination to run programs from a second floppy or a hard disk. Your program should therefore assume that any files it needs will be on Drive A:, and that the user will not have been daft enough to put them into a folder. If the resource file your program needs is not in the root directory of Drive A:, the best solutions are to display an unintelligible TOS error number or simply to bomb out.

5. When using alert boxes, try to arrange things so that the mouse pointer remains switched off when the alert appears. This simple trick can give the user hours of fun trying to guess where the invisible arrow is so as to select Cancel, or can provide him with an amusing ten minutes pressing Return for the default Retry option.

6. Help the user by making your program as configurable as possible (but see 3 above concerning keyboard shortcuts). The options should all be selectable by means of one or (preferably) more large dialogue boxes, and the default options should be carefully chosen so as to be no good to man or beast. Once the user has selected the options required, it should not of course be possible to save them.

7. Do not insult the users by treating them like idiots. If a user selects Quit or Load - or of course their keyboard equivalents, if any, (perhaps Help and Control-S) - your program should assume that he means it and should obey the instruction without further ado. If this results in the loss of an hour's work, that's not your problem.

When using alert boxes, try to arrange things so that the mouse pointer remains switched off when the alert appears. This simple trick can give the user hours of fun trying to guess where the invisible arrow is so as to select Cancel, or can provide him with an amusing ten minutes pressing Return for the default Retry option.

8. A neat bonus for the user, particularly popular in games programs, is to offer no means of leaving the program other than with a reset. The user can then have fun trying various key combinations and clicking all over the screen before pressing Control-Alt-Delete... which you will of course have disabled, leaving no alternative but to fumble round the back for the reset button.

9. The importance of documentation should not be underestimated. Here there are two options:

(a) Provide a lengthy README file, carefully formatted so as to be readable only in a different resolution to that used by the program. Do not get carried away with details of how the program works and what its limitations are, otherwise you might spoil the user's fun. Instead give a blow by blow account of the program's development from version 0.01 to the current version 5.92, complete with an in-depth technical description of the various problems you had to overcome en route.

Or:

(b) Provide no documentation at all. After all, you're a programmer, not a novelist.

10. If you issue your program as shareware, take every precaution not to respond to any letters concerning it, even those which include cheques or SAE's. Your job finished when you issued the program, and any dosh that does trickle through the letterbox should go straight into the Friday night kitty at the Rose and Crown. Otherwise, how on earth can you be expected to start your next program on Saturday morning?

Advanced ST System Programming

Part 2

by Andy Pennell

How many programs have you tried to run only to get an alert box saying 'This does not run in this resolution - switch to xx resolution and try again'. The truth is that, with a little more effort, most such programs could be persuaded to work in all modes, both present and future. This article intends to explain how to try to achieve this, and also explains the correct use of the blitter calls.

Legal Screen Accessing

Screen Modes

Some typical ST screen modes are shown in the table below; if at all possible your code should be designed to work in all modes, unless you have a good reason to do otherwise.

Mode	X	Y	Depth	Palette
Low	320	200	4	512/4096
Medium	640	200	2	512/4096
High	640	400	1	2/4096
TT Low	320	480	8	4096
TT Medium	640	480	4	4096
TT High	1280	960	1	2
Large screen	varies	varies	varies	varies

Investigating Screens

Given such a wide (and theoretically infinite) variety of screen modes, how can a programmer possibly cope? Even something as straight-forward as the palette range cannot be assumed. Fortunately it is possible to enquire about all of the above attributes using various parts of the operating system.

The address of a screen should be found using the XBIOS Logbase function; if you use Physbase you may experience problems if using a screen-switching debugger, such as MonST.

GEM Programs

GEM programs can easily enquire about their screens using the VDI. The pixel size and depth can be found immediately after an Open Virtual workstation call, but can be discovered subsequently using the Extended Inquire function; this was shown last month but is repeated here with an additional line as we will be using its results.

TOS Programs

TOS programs can also find this same information out, but in a different way, by using the Line-A variable area. It contains two area of interest; INQ_TAB (offset -$30E) and DEV_TAB (offset -$2B4). The former contains the output array as if vq_extnd had been called, the latter contains the output array as if v_opnvwk has been called. I'm not going to show a a program segment as Line-A access varies too widely between compilers, but instead I'll present a table summarising the offsets (see over).

How to Blit

One of the most complex VDI calls goes by the easy-to-remember name of vro_cpyfm; it allows access to the 'bitblt' calls to move rectangular areas of memory around, more commonly known as blitting. You don't need a blitter in your machine to use this call; it just works a lot faster if you do have one, or a VDI-patch replacement such as TurboST.

There are various uses for the vro_cpyfm call, but the most popular are:

- Scrolling, horizontally, vertically, or both;
- Saving and Restoring screen areas;
- Simple sprite and animation handling.

The vro_cpyfm Call Itself

The purpose of vro_cpyfm is, basically, to move a graphic rectangle from one area of memory to another, in a reasonably flexible way. The call itself doesn't look too off-putting at first (except for its name); it only has four parameters. In BASIC it looks like this:

```
vro_cpyfm
mode,xy(),source&,dest&
```

Leaving the mode parameter, I'll try to explain how the others all work with the use of a diagram. Assume that you have a screen display with rectangle A, and you wish to move it to another position, rectangle B. This is just the sort of thing vro_cpyfm can do.

The xy() array should contain 8 integers; the first four describe the source rectangle (in the form x1,y1,x2,y2 where x1,y1 is the top left) and the second form the destination rectangle, described in a similar way. Pretty straightforward, but what are the source& and dest& parameters for? The vro_cpyfm call needs to know certain other information; in particular it needs to know where the screen is in memory; what the size of the whole screen (not the rectangle) is; and how many bitplanes it has. source& and dest& need to point to an MFDB structure, which stands for Memory Form Definition Block. This structure consists of ten integers as follows:

Word	Use
0	Memory pointer high word
1	Memory pointer low word
2	Width in pixels
3	Height in pixels
4	Width in words
5	Form Format Flag
6	Number of planes
7	Reserved
8	Reserved
9	Reserved

The memory pointer should point to the screen (we shall see shortly that it doesn't have to be a screen, but it's easier to imagine for now). Most of the other parameters can be found as described above, and the reserved fields should be initialised with zero (in case they have an effect one day). Note that the pixel width field must always be a multiple of 16.

The only unusual flag is Form Format Flag; this should always be zero for vro_cpyfm, which denotes device-specific form. The VDI has a standard format for bitplane arrangements which is not the same as the way an ST screen display is laid out, and so this flag must always be zero.

The mode parameter can be one of 16 possible values and controls how the new image is placed over the old. The most common is mode 3, Replace, in which the old contents are lost entirely. While debugging it can be very useful to specify a mode of 15, which means that regardless of the data itself, a black rectangle will result. The full list of available modes can be found in any half-decent VDI technical book.

Example 1: Scrolling

A very common use for blitting is in scrolling within windows; most non-trivial GEM programs have a need to do this at some time or another. When you are scrolling you can use the same MFDB as both source and destination; only the rectangle parameters need be different.

Listing 2.2 should be added on to the end of Listing 2.1; its main area of interest is in sub-program SRECT. This takes a VDI rectangle specification (remember that VDI rectangles are described by a pair of co-ordinates, not AES-type x,y,w,h parameters), an x-displacement and a y-displacement. It then moves the rectangle as requested.

The original version of this program used the sub-program INIT_SCR_MFDB, which initialises an MFDB suitable for the screen. However, it is not quite system legal, as the word width might not be correct. The word width is the number of words of memory one line takes up, ignoring the screen depth. For all standard modes, this can be calculated by taking the pixel width (which must be a multiple of 16) and dividing it by 16. However, on

Attribute	Line-A Variable Offset	Notes
Width	-$2B4	Add 1 for total width
Byte width	2	
Height	-$2B2	Add 1 for total height
Planes	-$306	
Palette	-$266	

some video devices and overscan modifications this is not valid, as they use extra bytes off the right hand side for padding. The only legal way to get the word width is to look at offset 2 in the line-A structure and shift it right by the screen depth plus 1. Unfortunately, line-A access is very messy in BASIC, but there is an easier way: if the memory pointer in an MFDB is zero, the VDI automatically uses the correct values for the screen. I've left the old code in as 'comments out' so you can see how the fields are set up under normal usage.

Care should always be taken with the mouse pointer when using VDI calls; it shouldn't be there during anything that might effect the screen, and that includes blitting, hence the v_hide_c/ v_show_c calls.

The test code is simple but shows the call in effect; it draws a large circle on the screen, then scrolls most of it down and to the right one pixel. This will be practically instant on a hardware-assisted machine, so delay loops may be required to see the effect.

Example 2: Saving and Restoring Screen Memory

The blit call can also be used to save and restore arbitrary rectangles on the screen; this can make redraws after dialog boxes, for example, seem instant, as well as avoiding the more usual window refreshing mechanism of the AES. This is exactly what the AES itself does when displaying alert boxes and menus, but not dialog boxes.

Listing 2.3 should be entered after Listing 2.1. There are three important subsections to it.

The function FNget_buffer& calculates how much memory is required to remember a particular rectangle, based on the pixel size and number of planes. It then tries to use the DOS Malloc call to allocate the memory. A similar calculation should be used even if you have a program which wants to save and restore whole screens; it is not safe to assume a screen takes 32000 bytes any more, with the TT and large screens around. In order for GEMDOS to be able to allocate memory, the compiler option k20 has been specified. This ensures that only 20k of memory is kept for the program during startup, the rest being freed for GEMDOS. The equivalent option may be required in other languages (but not C).

The SAVE_SCREEN sub-program starts by building its own MFDB; we are going to be copying from the screen to a block of memory, and the MFDB is configured as if that memory was another screen, but whose size is just big enough to hold the required rectangle (whose width may required rounding up to a multiple of 16). The source rectangle is as passed straight through from the caller, while the destination rectangle is adjusted so that it lies at the top left of the block of memory. This is illustrated below.

The RESTORE_SCREEN sub-program is, not surprisingly, very similar, except that the source and destination rectangles are swapped over as well as the two MFDB parameters.

If you are saving and restoring small areas of screen and memory is tight, you can try using the same buffer that the AES uses when it does alerts and menus. You can discover its address and length using the wind_get call (see box-off) but never use it if the length indicates there isn't room else very nasty things will happen.

Value Your Eyesight

The vro_cpyfm call is extremely flexible, in fact it is too flexible. With no hardware blitter, the software can produce very unpleasant screen effects in colour screen modes because it insists on moving each bit-plane separately, instead of together. This is particularly noticeable in low-resolution screen and is embarrassing to see in TT low-resolution, complete with eight bit-planes and no blitter to help out (the TT has no blitter, by the way). What can you do about it?

There are only three possible choices to improve the performance of vro_cpyfm; they are:

- add a hardware blitter; not a cheap option but can be done with various accelerator-type cards;
- add a software blitter; TurboST is only just slower than the real thing;
- add a special assembly-language routine that is optimised to avoid the problem.

If you choose option 3, always make sure that you're in the right screen mode. Don't just check getRez, but use the pixel size and plane values to match with known screen modes. If you don't recognise it, use vro_cpyfm, if you do, use your super-whizzy replacement. That way at least every user will be able to use your program, even though some will get a better display than others.

If you need to you can check for the presence of the various forms of blitter as shown below. Note that the TurboST check is far from foolproof - it only works if the accessory version is installed (not the AUTO folder) and only if the accessory is named TURBOST.ACC.

That's it for this month; next month I'll be covering some of the more unusual things you can do with AES objects - not the ordinary boring dialog box handlers, but exciting things like pop-up menus, named file selectors and the amazing ProgDefs. Stay tuned...

Listing 2.1

```
DEFINT a-z
LIBRARY "gemvdi","xbios"
DIM info(56)
DIM SHARED s_width,s_height,max_palette,s_planes,s_addr&
vq_extnd 0,info()
s_width=info(0)+1
s_height=info(1)+1
max_palette=info(39)
vq_extnd 1,info()
s_planes=info(4)
s_addr&=FNlogbase&
```

Listing 2.2 - enter after 2.1

```
REM $OPTION Y+
' test code
DIM SHARED smfdb(9),smfdbptr&
WINDOW OFF                              'stop BASIC interfering
v_hide_c
INIT_SCR_MFDB
vs_clip 1,0,0,s_width-1,s_height-1
vsf_interior 2: vsf_style 5: vsf_perimeter 1: vsf_color 1
vsl_color 2: vsl_width 7: vsl_type 1
v_circle s_width\2,s_height\2,s_height\2
FOR i=0 to 9
SRECT 10,10,s_width-20,s_height-20,1,1
NEXT i
v_show_c 1
SUB SRECT(x,y,x2,y2,xdisp,ydisp)
LOCAL xy(7)
' set up source and destination rectangles
    xy(0)=x: xy(1)=y: xy(2)=x2: xy(3)=y2
    xy(4)=x+xdisp: xy(5)=y+ydisp
    xy(6)=x2+xdisp: xy(7)=y2+ydisp
    vro_cpyfm 3,xy(),smfdbptr&,smfdbptr&
END SUB
' initialise screen MFDB
SUB INIT_SCR_MFDB
    smfdbptr&=VARPTR(smfdb(0))
    POKEL smfdbptr&,0
' this code would be OK, except the smfdb(4) initialisation
'   POKEL smfdbptr&,s_addr&
'   smfdb(2)=s_width
'   smfdb(3)=s_height
'   smfdb(4)=s_width\16 'integer division
'   smfdb(5)=0
'   smfdb(6)=s_planes
    smfdb(7)=0: smfdb(8)=0: smfdb(9)=0
END SUB
```

Listing 2.4

```
' find out about blitters
DEFINT a-z
LIBRARY "xbios","gemaes"
PRINT "Hardware Blitter: ";
b=FNblitmode(-1)
IF b AND 2 THEN
PRINT "Fitted, ";
IF b AND 1 THEN
PRINT "Enabled"
ELSE
PRINT "Disabled"
END IF
ELSE
PRINT "Not fitted"
END IF
PRINT "Software Blitter: ";
b=FNappl_find("TURBOST ")
IF b<>-1 THEN
PRINT "Fitted"
ELSE
PRINT "Not fitted"
END IF
```

Menu/Alert Buffer

The AES allocates itself a buffer which it uses to save areas of the screen when pulling menus down and popping up alert boxes. The address and length of this buffer can be discovered using the wind_get call, as shown in Listing 2.5.

Unfortunately, in the blitter ROMs (1.02) this call was broken so that the length field always returned zero, but in 1.02 the length is always $3400 bytes (regardless of mode). Different ROMs give varying results for the length of the buffer; it is one of the few areas that is very different all the ROMs.

If you write past the end of this buffer area, very nasty things will happen. If your program is running from the Desktop (and not from a shell-type program) then the memory overwritten will be your programs own basepage. If your programs Quits, it will die if the basepage is corrupted. If the system tries to print bombs, it will die as the bomb handler tries to issue a terminate call. If you load your program with a debugger then the debugger's basepage (and start of its code area) will be corrupted so you will still be in trouble. To find such problems, run a debugger; load another copy of the debugger into that, then load your program into the second one. Incidentally if you make a pull-down menu too large and overflow the buffer, similar things will happen. What exactly is a 'too-large' menu? Well, you'll have to wait for another instalment to find out.

Listing 2.5

```
' find out about alert/menu buffer
DEFINT a-z
LIBRARY "gemaes","gemvdi"
junk=FNwind_get(0,17,x,y,w,h)
buf&=0:len&=0
POKEW VARPTR(buf&)+2,y:POKEW VARPTR(buf&),x
POKEW VARPTR(len&)+2,h:POKEW VARPTR(len&),w
IF len&=0 THEN len&=&h3400
PRINT "Buffer:";HEX$(buf&)
PRINT "Length:";HEX$(len&)
```

Blitting Warnings

There are a few things to be careful about when using vro_cpyfm; experience has taught me the following:

Always save everything before debugging a program with new blitting code; if anything goes wrong it is all to easy to blit a piece of system memory, or your reset-survivable RAM-disk (you know - the one will all your source code on...).

Unlike most other VDI calls, vro_cpyfm does not support clipping. If a rectangle falls off any edge of the screen, nasty things will happen. Always check both rectangles are within the area of the screen; my examples here don't check to preserve clarity. A classic example to try is when scrolling the contents of a window that has one or two edges off-screen; several commercial applications die when this happens.

If something is happening but the resulting display looks garbled, make sure both source and destination rectangles are the same size.

If your blitting is generally working but you're getting a sort of XOR effect on half of the image, or other strange effects at the top or bottom, beware: TOS 3.06's (and maybe 2.06's) new blitting code is broken and is unreliable if you are blitting from a high address to a lower address. Try your code on earlier ROMs to be sure.

Listing 2.3

```
REM $option k20
LIBRARY "gemdos","bios"
WINDOW OFF
DIM SHARED smfdb(9),smfdbptr&
INIT_SCR_MFDB
v_hide_c
vs_clip 1,0,0,s_width-1,s_height-1
vsf_interior 2: vsf_style 5: vsf_perimeter 1: vsf_color 1
vsl_color 2: vsl_width 7: vsl_type 1
v_circle s_width\2,s_height\2,s_height\2
oldscr&=FNget_buffer&(40,40,80,80)
IF oldscr&=0 THEN
v_show_c 1: SYSTEM
END IF
SAVE_SCREEN oldscr&,0,0,s_width\2,s_height\2
vsf_color 0
vr_recfl 0,0,s_width-1,s_height-1
k&=FNbconin&(2)
RESTORE_SCREEN oldscr&,0,0,s_width\2,s_height\2,3
v_show_c 1
k&=FNbconin&(2)
SYSTEM

' allocate a block of memory for a buffer; returns 0 if none
DEF FNget_buffer&(x1,y1,x2,y2)
LOCAL total&
    total&=((x2-x1)\16+1)*2*(y2-y1+1)*s_planes
    FNget_buffer&=FNmalloc&(total&)
END DEF

SUB SAVE_SCREEN(where&,x1,y1,x2,y2)
LOCAL mfdb(9),xy(7),mfdbptr&
' set up MFDB for memory
    mfdbptr&=VARPTR(mfdb(0))
    POKEL mfdbptr&,where&
    mfdb(2)=((x2-x1)\16+1)*16
    mfdb(3)=y2-y1+1
    mfdb(4)=mfdb(2)\16
    mfdb(5)=0
    mfdb(6)=s_planes
    mfdb(7)=0: mfdb(8)=0: mfdb(9)=0
' set up source and destination rectangles
    xy(0)=x1: xy(1)=y1: xy(2)=x2: xy(3)=y2
    xy(4)=0: xy(5)=0
    xy(6)=x2-x1: xy(7)=y2-y1
    vro_cpyfm 3,xy(),smfdbptr&,mfdbptr&
END SUB

SUB RESTORE_SCREEN(where&,x1,y1,x2,y2,mode)
LOCAL mfdb(9),xy(7),mfdbptr&
' set up MFDB for memory
    mfdbptr&=VARPTR(mfdb(0))
    POKEL mfdbptr&,where&
    mfdb(2)=((x2-x1)\16+1)*16
    mfdb(3)=y2-y1+1
    mfdb(4)=mfdb(2)\16
    mfdb(5)=0
    mfdb(6)=s_planes
    mfdb(7)=0: mfdb(8)=0: mfdb(9)=0
' set up source and destination rectangles
    xy(0)=0: xy(1)=0
    xy(2)=x2-x1: xy(3)=y2-y1
    xy(4)=x1: xy(5)=y1: xy(6)=x2: xy(7)=y2
    vro_cpyfm mode,xy(),mfdbptr&,smfdbptr&
END SUB
```

Going On-Line

Pirates or Pawns?

This month, Mark Baines draws to your attention a serious threat against all Bulletin Boards in the UK.

I recently received a copy of issue 3 (Autumn 1992) of "ELSPA Express", the newsletter of the European Leisure Software Publishers Association Ltd. ELSPA is a UK-based organization of 55 companies that are interested in publishing leisure software for all computer and console formats. It has on its Council some influential companies: Europress Group, Future Publishing, Commodore UK as well as important games software publishers Electronic Arts, Ocean, Audiogenic, Psygnosis, Domark, Microprose and others.

On the back cover of their newsletter, under the title "Taking on the pirates" there is an article mentioning that ELSPA are sponsoring the employment at FAST of a representative "working on behalf of the computer and video games industry" to "take on the pirates".

"One of the first areas to be targeted is an attempt to reduce the enormous damage done to the industry by probably the majority of bulletin boards. Various options are being investigated, some of which are not for publication. However, it is intended to aim for legislation requiring each Bulletin Board to be licensed. This will require a strong lobby both in UK and the EEC. Steps are already in hand to set-up the lobby in conjunction with FAST. This may entail sponsoring a specific MP who in fact is a FAST Board Member."

Misconceptions

I was most disturbed to see this. The tone of the article is very aggressive towards all bulletin boards in general, branding "most" of them with the label of 'piracy'. What I find most disturbing is the misconception and inaccuracy of ELSPA's assumptions. Might not "the enormous damage to the industry" have something to do with the worst recession since the 30s, high prices and the success of games consoles? I'm not going to make excuses for piracy: it exists, it is wrong, full stop. Surveys have shown that most computer users and companies have pirated software. So where do they get it from? Mostly from private exchanges via disks, anything from adolescent playground swapping to a network manager 'trying out' a colleague's package to organized counterfeiting through retail shops and market stalls. There is absolutely no evidence in the UK that "most" bulletin boards are pirating software. Common sense shows the reality of the situation. Most comms users only have access to 1200 and 2400 bps modems. Obtaining copies of large games files is more convenient and cheaper by exchange of disks via the playground or post.

Yes, I suspect that there are some bulletin boards that have pirated software in their files lists. I consider myself an experienced comms user and I personally know of none in the main networks, FidoNet, NeST and TurboNet in the UK. I'm not suggesting that they don't exist, its that I haven't come across any. If ELSPA are right, I should be falling over them every time I switch on my modem. There have been three occasions when I have spotted a program whose status (for justifiable reasons) has been unclear over the years (Atari's Neochrome and ChkDisk come to mind) and having mentioned to the sysop Atari's clarification of the situation, those sysops were most willing to remove the files.

My experience over the years confirms the responsibility that sysops and comms users have towards piracy. Bulletin board users in the UK are not the militant anarchists and hackers the media and popular, uninformed opinion believe. Occasionally a new and, invariably, young user will appear in the conferences with this view seeking commercial software. There is always a strong reaction against them and they usually leave the network knowing the reality. Many comms users are programmers in their own right, professionally or for the shareware market. Piracy affects them as much as the big commercial companies. Piracy is something the vast majority of comms users and sysops despise and actively work against. You have to be active in the networks to see that.

The reality?

What worries me about ELSPA's stance is that it is another example of a group with influence and power (read money) imposing its will on others who appear defenceless and an easy option in the PR business of justifying your own existence to members and others alike in the politics of the retail industry. To try to ban bulletin boards altogether, which I suspect is the real aim, would never get beyond the human rights lobby. So, the plan is to introduce an air of respectability by developing a licencing scheme. Licences appear to indicate the adherence to an imposed standard and the protection of the innocent. But a licence to do what? To have a computer attached to a telephone line and have someone call you, to be a sysop, to run certain BBS programs, to make files available, a licence not to make available commercial software? Who would be the licencing authority? On what basis is approval given - examination? ELSPA don't say. I'm not sure that they know. And the sting in the tail? To introduce a charge for that licence (administrative charges?) that, being so extortionate, couldn't be paid and forces the BBS to close. At the end of the day, would the right to obtain a licence be solely dependent on the ability to pay for it? Most comms users wouldn't pay fees to use a BBS. Those with the ability to pay more than a telephone call log on to CompuServe or CIX. But what if those few bulletin boards dispensing pirate programs charged the users a small fee to 'cover costs'? There would be more of an incentive for this type of user to contribute. Such users may even see the paying of such fees as legitimising the use of pirate software. Hasn't the plan then backfired? Let's be clear about this. What ELSPA and others want is not the licensing of bulletin boards, but their closure. The licence is not important, the fee imposed is.

Feeling is high. Not because we comms users would be deprived of an access to pirated software, that is ludicrous, but because we are watching an injustice and a violation of our rights to pursue our hobbies and interests. The vast majority of bulletin boards are not concerned with distributing pirate software but about the dissemination of information and messages between all manner of interested computer owners. The BBS network is a communications network and providing a valuable service for all, yes even for software publishers - you can't get cheaper publicity and endorsements of your products. The enormous benefits that the majority of users and sysops obtain is to be destroyed for the actions of a small minority inaccurately deemed to be a major threat to the leisure software industry.

Bulletin boards in the UK are not your real problem, ELSPA. Please investigate for yourselves: log on, take some conferences, examine the file lists and see what bulletin boards are really about. You may even like what you see and if you are serious about fighting piracy, find friends and colleagues, not enemies.

STICKS AND STONES

The sad death of an old friend prompts Günter Minnerup to conduct an inquest into Atari's failure to crack the serious desktop publishing market.

Bargains are great, everybody loves bargains. Especially the buyer who acquires something which he knows would have cost him a lot more at another time, in another place. All too often, however, the buyer's bargain makes a less than happy story for the other parties involved in the transaction - just think of today's depressed property market: while you may well be able to find the house of your dreams at a knock-down price these days, your good fortune may well be someone else's tragedy, having been forced out of their home by the mortgage lender's repossession proceedings. In these times of depression, a lot of price cutting reflects severe economic distress, dealer margins close to subsistence levels and quite often bankruptcy itself. One such bargain with an unhappy story behind it could be found in ST Applications recently, with the offer of Fleet Street Publisher Version 3 at a ridiculously low £35.

I have always been a great admirer of this program, right back to its early Version 1 days. I reviewed it enthusiastically in ST World, and notwithstanding what I wrote in last month's column about reviewers short-term enthusiasm for feature-packed novelties, it has never once been pushed off my hard disk and remains one of my most frequently used workhorses. I have Calamus SL, Didot Professional, PageStream 2 and Timeworks Publisher, but for bulk text setting with great accuracy and a minimum of fuss, Fleet Street Publisher remains my first choice. It is fast (by DTP standards), TT compatible, very reliable (a rarity indeed among ST desktop publishers), extremely powerful and, above all, flexible. It has a built-in spellchecker and multi-lingual hyphenation dictionaries, import filters for a variety of text and graphics formats, vector drawing tools, a capable text editor. Apart from its own UltraScript format vector fonts, it can use standard GEM fonts without the inconvenience of GDOS. It can drive PostScript printers and write PostScript to disk, import PS and EPS files, has the best manual in the business and makes full use of GEM's multiple windows. Although no longer supported by a defunct Mirrorsoft, at £35 I can only warmly recommend it to any Atari DTP enthusiast, whatever other software you may already own. Come to think of it, I would still wholeheartedly recommend it at three times that price.

Seeing such a fine product flogged like rotten fruit makes me very sad on several counts. Mirrorsoft were part of the Maxwell empire, of course, and the collapse of this hideous edifice built on intimidation and fraud is a very grim story in itself. But the demise of Fleet Street Publisher preceded that of Maxwell Communications and was caused by Mirrorsoft's decision to drop serious Atari products and go all out for the games market. Development of Fleet Street Publisher had been the job of Jon Norledge - as enthusiastic, knowledgable and helpful a person as you are ever likely to meet in the software business - who was then transferred to the dreadful, ill-fated Turtles game project. Released into the market without an advertising budget and overshadowed by the razzamatazz surrounding Calamus, Fleet Street Publisher never attracted the attention it deserved.

Yet despite all this, the program had a very successful and largely unknown career as a serious typesetting engine for a variety of publications and publishing houses, driving much more substantial machinery than laser printers and bureau imagesetters. Even now, this "Secret Life of FSP" is shrouded in commercial secrecy and was in any case hidden in boxes with no Fuji logo to betray their Atari origins. There are more such clandestine STs than you would expect, especially in Germany where the speed and programmability of the Motorola 68000 as well as the cheapness of the hardware quickly attracted the attentions of university research lab managers and industrial production engineers. Yet the undisguised ST in its full grey plastic glory never found sufficient acceptance in the professional and commercial sector to establish it as a serious alternative to the Mac and PC - not even in Germany, and not even in desktop publishing, one of its major strengths and one of the big growth areas in the personal computer market. Whatever the failures of Mirrorsoft, this fact lies at the heart of the sad demise of Fleet Street Publisher.

It could have been so different if Atari Corporation had grasped the two essential preconditions for success in the rapidly expanding DTP market: unequivocal support for the PostScript page description language and a a clear upgrade path for the hardware. Without easy access to the huge library of PostScript screen and printer fonts (through something like Bitstream ST or Adobe Type Manager ST, as well as a reliable PostScript emulator for the Atari laser printers) and the availability of the sort of processing power, display technologies and mass storage devices required to cope with high resolution graphics and imagesetter output, Atari did not stand a chance alongside Apple and IBM. It was too much to expect of Fleet Street Publisher and PageStream - the two major Atari DTP programs to try and keep up with the real world of PostScript - to fight this battle alone without determined and unequivocal support on the part of Atari.

Instead of being seen to tackle the real world, Atari appeared to be backing Calamus as its main weapon in the DTP market, particularly in Germany. Now Calamus is a very impressive product indeed, and I am one of its great admirers and regular users. But I cannot help feeling that the Calamus road was a road into the DTP ghetto, away from the PostScript industry standard. It is great fun to impress Mac and PC owners with what Calamus can do, but it will not persuade them to switch to the Atari platform as a credible alternative if that means abandoning the open universe of PostScript for a closed and ill-supported environment.

When I see Fleet Street Publisher being flogged off cheaply, therefore, I mourn not only the death of a good old friend, but also the death, for the time being at least, of any hope of establishing Atari as a mainstream professional DTP platform. The rumoured adoption of the Bitstream font technology for the latest incarnation of FSM-GDOS (another sorry story of delay and confusion, hardly the stuff to entice the professionals into the Atari fold) may offer a ray of hope - but seven years after the launch of the "Jackintosh", we should have more than rumours to stand on in the world of PostScript publishing.

Günter Minnerup

FORUM

Sticking Hard Drives

Ewan Haggarty - Forum STA 23
Keith Berry - Forum STA 23
Dave Hennicker - Forum STA 24

I For anyone who is about to move house, I would like to offer the following advice concerning hard-disks. Be very careful transporting the beast! I thought I was quite gentle enough with it, but now it refuses to boot up. The annoying thing is that it did work for a couple of hours this morning, but at the moment it is quite dead again. It may of course be because it's 18 months old, like Keith Berry's, but the coincidence of it happening when I've just moved seems a little too much.

In answer to Keith's query on mixing GE and ICD host adaptors I can say that they will chain together. My dead 45Mb drive has a GE host adaptor and my second hard disk is an old 20Mb Third Coast unit with an ICD unit. As long as I connect the GE unit directly to the ST and plug the ICD unit into the GE's output socket (and use a different SCSI ID) the GE disk boots, and then I run ICDBOOT.PRG from the desktop to activate the Third Coast unit. It doesn't work the other way around. Perhaps someone else can tell us why.

Geoff Wilson

I The implication in Keith Berry's letter is that he prefers the ICD software. If this is true then it ought to be possible for him to use the ICD host adaptor from his Power Drive instead of the GE-soft one he currently uses.

Having only one hard drive, I don't know how easy it is to daisy-chain them using the DMA port, but it would certainly be possible to use a SCSI lead to connect another mechanism either in the case with the Datapulse drive or in his Powerdrive's case. SCSI leads can be made up very easily with 50-way ribbon cable and IDC connectors (available from Maplin). The IDC connectors are very easy to fit, but make sure they are straight and the right way round, or you will waste a lot of time trying to find out why it does not work.

Mark Baker

I My drive is a Power Drive 900E slimline variant, and some months ago I noticed it was taking longer than usual to run up to speed. This rapidly got worse, until the drive consistently failed to run at all. This sounds rather like the experiences of Keith Berry and Ewan Haggarty, although my circumstances are slightly different. My drive mechanism is made by NEC and not Sony, and the powering arrangements are different in at least one case.

Keith does not say how his drive was powered, but Ewan uses a tap from the main computer power supply, whereas I used to use the Power Computing external mains unit. I say "used to" because, when I checked the power supply rails, I found the +12 Volt line (used to run the drive motor) was the problem. It was repeatedly dropping out each time the drive attempted to start up and then quickly bouncing back until the next attempt. I experimentally tried propping up the supply with a 2200 uF reservoir capacitor across the power rails, which restored the drive to normal. This implied that there was not enough peak current delivery from the supply alone to kick the drive into life, but the additional short-lived burst of current from the capacitor was enough to finish the job. Once the drive was in motion, the continuous current demand was within the capabilities of the supply alone.

From this evidence I assumed that the Power Computing mains unit was probably to blame, and as it was encapsulated in resin it would be impossible to repair. It was running at a rather high temperature, too - enough to deform the plastic casing in places, so I didn't trust it very much anyway. I decided to replace it with a much higher capacity supply, capable of running my other peripherals too, as well as solving the hard drive problem. Taking the cheapest and easiest route, I bought a ready-made unit intended to run in-car CB equipment, and modified it for my needs. I adjusted the original regulated 13.8 volts down to 12, and added a 5-volt, 1-amp regulator chip to run the hard drive's interface card.

However, from the similar experiences of Keith and Ewan, it would appear that it is the start-up current required by the hard drive which slowly increases with age, and ultimately exceeds the surge delivery of the supply. This perhaps implies that my original supply was not actually faulty, but just underpowered for the eventual peak current demand, and that Power Computing are a little over-optimistic about the supply ratings. In any case, I would suggest using a dedicated external supply independently capable of delivering 12V at 2A and 5V at 1A.

Incidentally, the ICD program IDCHECK shows that my NEC D3855 mechanism as supplied occupies SCSI ID 1. If Keith Berry still wants to experiment with his dead Power Drive, it may be worth trying to change the ID number of any new mechanism. I have just tried an experiment and found that selecting ID 0 prevents my drive from booting. After re-selecting ID 1, a true cold boot (ie. from being left switched off) seems to be required to restart the drive. That had me worried at first!

Anon

DMA Power Problems

Q I use a Supercharger Emulator attached to my Megafile 30 via the DMA out port. It obliges me to turn it on every time I use the computer. I use the "Atari side" much more

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The Forum pages are a regular feature of ST Applications, enabling readers to exchange ideas and help each other out with problems. Whilst we attempt to briefly answer questions here, if you have additional information or ideas please do submit them for publication. What you consider to be trivial information can often be of condiderable use to other readers!

Please send your letters on disk if possible. Disks will be returned with a PD of the writer's choice. Longer submissions may appear as articles, in which case you will receive payment at our standard page-rate.

Key:

The following codes are used for each Forum entry:

J Pringle - Forum STA 20: Author who first raised the subject, and in which issue.

Q Question

A Answer

I General information or 'Input', advice, discussion, hints and tips, etc., with or without reference to previous Forum pieces.

• Editorial reply

than the PC one, and at boot-up it is very embarrassing indeed, let alone the useless consuming of power for the Supercharger. The same problem must apply I suppose to other adds-on to the DMA port, including Atari laser printers. Does anybody know of a solution for fooling the system into thinking that there is nothing attached to it, so that the hard disk can work properly without my having to turn Supercharger on?

Dr Luis Aguera Ortiz

● A device suitable for allowing an Atari laser to be powered off whilst still connected to the ST via a hard disk was described in issue 3 of ST Applications: this should work also with the Supercharger set up that you have.

Cover Disk Software

J A Higham - Forum STA 24

● Concern over the giving away of software on magazine cover-disks continues with the renewal of the accord between ELSPA (European Leisure Software Publishers' Association) and the mainstream magazine publishers (Future Publishing, EMAP Images, Europress, etc.). The agreement reads:

1. Magazine publishers shall, as from July 1st, 1992, agree not to carry any full game disk software which at any time in the past has been published commercially at any price point.

2. Magazine publishers agree that the commissioning of full game disk-based software from a recognised development or programming company shall be included in the agreement as in item 1.

It should be clearly stated that the accord includes software that has at any time in the past been commercially released on any format.

It can be confidently hoped that the magazine publishers will stick to both the letter and spirit of the agreement, despite the fierce competition that exists between them.

Publishers of 'applications' software obviously don't book enough full-page colour ads - ?

DeskJet Matters

A very popular topic!

I In STA 23, Keith Berry ponders the possible reason for the eventual death of his colour-refilled DeskJet cartridges, and considers the idea that the brand of ink he has used is clogging the jets. I have also been experiencing some stripy results, but I am using the Inkmun colour kit. The kit consists of yellow, cyan, magenta and black refills, and now all four of my current cartridges are refilled empties. Only the yellow performs completely satisfactorily, while the black refill has begun to give some random faint stripes. Cyan and magenta both have bad fixed stripe patterns. Admittedly, this doesn't really prove anything, but I think if two different brands give the same problem, it's less likely to be an ink problem.

Keith effectively blows away the possibility that storage is the problem when he tells us that his genuine HP black cartridge spends as much time in his wet-storage box as any other cartridge, without suffering the same fate. The possibility that the electrical contacts are the problem is also eliminated when you consider that the black cartridge is removed from the printer carriage and re-inserted just as often as any other. Certainly in my case, the black cartridge is always put back into the printer once I have finished any colour work, and full colour prints are a four stage process which includes a black pass.

So, what possibilities remain? I did briefly consider the idea that both Keith and I had used overly rough handling on the empty cartridges during the flushing and refilling process. However, my evidence seems to refute this. My yellow cartridge was flushed much more vigorously than the cyan and magenta. Because it's the palest colour, I tried to remove all trace of the previous black ink, almost to the point of paranoia, and despite this, it's the best of the bunch! Also, the black refill wasn't flushed at all, and yet it is showing faint signs of trouble.

What else do the failing coloured cartridges have in common, then? They are all refills, but this also implies that they are all old. They have had one normal lifetime already. I have noticed that new HP cartridges have a "use before" date printed on the box. Once I have installed a new cartridge and thrown away the packaging, I generally forget that there was an expiry date at all. I suspect that every DeskJet user does the same. But some questions must now be asked. Why is there an expiry date? How is it arrived at? Could the limit be something other than the ink drying out in the nozzles? Perhaps the print head itself corrodes and crumbles away? This is not a very comforting line of thought, particularly considering the cost of the colour conversion kit, but would be confirmed if anyone has seen a non-refilled HP cartridge go stripy simply through old age. The stripiness shows up most clearly when printing uniform mid-grey areas, like a 50% raster pattern from Calamus, for instance. Perhaps Andrew South (STA 22 Forum) would like to comment!

Anon

I Scratch and Sniff?

Once upon a psychedilic time ago I ran a "Light Show". (Highest accolade - Pink Floyd liked it.) In part, this involved projecting coloured liquids sandwiched in slides onto a screen.

Once upon a not-so-distant time ago I was involved with a junior science education project. We wanted to find out if the kind of equipment used influenced the kids' enjoyment or understanding. (We got the obvious answer.) One thing the children did was to measure the strengths of different bleaches by timing how quickly they removed the colour from different coloured liquids.

In both cases fountain pen inks were perfectly useless. Observation produced the conclusion that they are particulate and unsuitable. I therefore reckon that their particulate nature is the reason they will not work satisfactorily with the HP DeskJet.

As I see it, a replacement DeskJet ink must have a strong colour, be a true solution and preferably be water soluble.

In my Light Show days and in the junior science education project, I found only one kind of readily available range of colours that met these criteria: food dyes.

Who will be first to load their cartridge with banana flavour? Smell me a postcard.

John Ridge

Falcon Feedback

John Watkins - Forum STA 24
Britt Johnston - Forum STA 24
Piper - ECTS Show Report STA 23

A I am writing to you after reading your article on ECTS in the November issue of ST Applications. There is a dual purpose to my writing, firstly to correct some factual inaccuracies and secondly to answer some of the questions you raised.

Our stand was manned by our sales and marketing staff who have a good overview of the basic technical specifications of the Atari Falcon030. When I was available on the stand they referred the more technical questions to me. However I spent most of my time at ECTS in meetings with developers and publishers and so was not able to spend much time on the stand to help with the questions of a more technical nature.

We used ECTS as a trade showing of the Atari Falcon030, hence the low profile that we chose to take. We did not use ECTS as the launch of the machine: that will happen at a later date. The ST monitors we used were the SC1435 monitors, which are stereo and can display the highest resolution of the Falcon030, whereas the Super VGA monitors cannot. Most of the pictures shown on the monitors were 768 x 480 in 16-bit 'True Colour' mode.

The direct-to-disk software was demonstrated on all three days of the show and most people were very impressed with what they heard. With regard to CD formats, the Falcon030 has a standard SCSI port on it and will therefore interface to standard SCSI CD drives. It can also interface to CD players that conform to the SPDIF standard. There are several developments in the pipe line some of which may well be PC emulators. As these are by third party developers I can be no more specific than that.

The Falcon030 is the start of a new platform of computers from Atari. As the product evolves there may be different variations. We would announce any new product at the time we thought best to announce it.

I hope this clarifies some of the points that your article raised.

Alistair Bodin

I I see that Atari is doing another non-launch with the Falcon. It reminds me of the first TT's (TOS1.4, etc). Perhaps Atari have

been caught out by EC rules on computer ergonomics - keyboards are supposed to be easily movable. The first Atari coverage in PCW for a long time was very favourable - November issue, pages 262-264. There was not much more detail but it was definitely a much better article than in any other UK magazine. What really set it apart, however, was the non-condescending attitude and the exclusive (so far) screen shots. GEM looks really good (equal to Windows 3.1 and System 7) at 640 x 480 in 256 colours.

What was even more impressive was the screen-shot of HiSoft's 'TruePaint'. The Falcon appeared to be editing a colour 'TIFF' file and a 'TIGA' file (both require serious processing power). Since the Falcon has an' overlay bit', perhaps it will replace the Amiga in video overlay generation. I wonder if the DSP chipset is fast enough to sample true colour video (or even TV) in real time? Apparently not even 33MHz 68040 Macintoshes can sample video in real-time (with the help of a £350 card)!

John Watkins

Ricoh LP1200

Neil Campbell - STA 24
Anon - Forum STA 24

I I was pleased to see that the article I wrote on the Ricoh LP1200 was published in the December '92 issue, but was somewhat disappointed to see that the piece was not credited to me.

In reply the piece in the Forum of that issue I would like to make the following reply.

Having just purchased a Ricoh LP1200 printer from Silica shop I was somewhat surprised to read the comments made in the December issue. Having gone to some lengths to ensure that I purchased the best printer I could, I made contact with a number of suppliers. I came to the final three: these were the HP IIIP, the Epson EPL4100 and the Ricoh. A supplier for the Epson told me that I was wasting my time, the output was not as good as the IIIP and that you could not get spare parts. It then transpired that he sold HP printers. When I asked if I could bring my computer to his shop to attach it to a printer, interest waned - the printers did not have enough memory or he just couldn't be bothered. I then spoke to Silica Shop, Steven Berry and Roger Lawrence, and these two gentlemen could not have been more helpful. I sent PageStream and First Word plus files and received printouts from the Ricoh. I also contacted Ricoh UK, where a gentleman called Bob Young gave enormous amounts of help and sent further information and printouts at 300 and 400dpi. As my article stated, I was so impressed with what I saw I immediately ordered a printer from Silica.

Neil Campbell

● Apologies for lack of a credit in your article - editorial oversight. Also, apologies in advance to the authors of Forum contributions in this issue credited to Anon. It is very helpful if contributors include their name and address within the on-disk text files as well as on accompanying labels and paperwork.

Good News Department

● Further to last month's Bad News Department piece about the Bath BBS we are happy to report that the board is still up and running - but is now only open to members.

Image Editing

Lawrie Purkess - Forum STA 24

A Butterfly Artist (DRG.42) can load and save IMGs larger than screen size using the following method:

a) Choose to save in IMG format
b) Mark the top left hand corner with the left mouse button
c) Drag the mouse - the screen will scroll to reveal more of the virtual work-space, and
d) Mark the bottom right hand corner with the left button and you're away!

IMGs saved in this way load perfectly into Calamus and I would imagine most other DTP packages.

Nial Grimes

Mega STE

Tim Bicknell - Forum STA 24
A F Mallett - Forum STA 24

I I bought my Mega STE from Gasteiner and was a little disappointed to find that it had a 720KB drive fitted instead of the 1.44MB one I was expecting. Gasteiner promised to fit the correct drive for me if I returned it (although they at first wanted £90 for the privilige!).

I wasn't too keen on the idea of sending off my machine by post and decided to take it to London with me a few weeks later. When I returned home, I scurried into the house to plug in the Mega and test the new drive.

Horror of horrors! I noticed that when I turned on the external 720k Cumana floppy, its active light was permanently on. When I powered up the computer and tried to access the new internal drive I kept getting error messages and the same thing happened with the external drive. I posted the machine back to Gasteiner next day and, three days later, received a repaired computer which worked perfectly. Apparently the controller chip had failed. However, Gasteiner did mention I wouldn't now be able to use a 720k external drive and I began to wonder whether plugging in my external drive had actually caused the chip failure.

Tim Bicknell seems to have had similar drive problems with his Mega STE and has also used an external 720k floppy. Is it possible for an external drive to damage a machine if it isn't the same type as the internal one? Needless to say, I haven't dared to plug in the external drive on my set-up, yet!

Chris Tofalos

Noisy Fans

Martin Norfolk - Forum STA 24

A Yes, I agree with you Martin, the Mega 1 should be fitted with a fan - especially if a memory upgrade is fitted. But the rated shifting of 210 litres of air per minute produced by the Maplin fan is a little excessive - especially when added to dB's produced by a complaining wife!

The problem was raised way back by Gavin Cape who suggested (in STA 13) wiring to the 5 volt supply rather than the 12 volt to reduce the fan speed. Without checking the rating of the 5 volt supply I'm not sure whether this is a sensible solution, especially as this is the part of the supply which gets hot!

Basically the fan is only a DC motor rated at 12 volts with an operating current of 160mA. To cut the fan speed I soldered a resistor in series with the fan and the 12 volt supply. Make sure it has a rating of at least 1 watt, and I suggest a value of around 150 ohms to suit your ears!

Of course, to get a little technical, it would be easy to make a simple variable voltage regulator with a quid's worth of bits from Maplins, but my Mega has been happy for over 12 months now - so keep things simple.

Chris Howland

A I have an 80mm Maplin fan inside my Atari 520 STE run from a 5-volt line from the analogue ports on the left of the keyboard. It is very quiet and cools effectively.

I took it out today and checked noise levels at different voltages. There is over 20dBA difference between 12v and 5v.

I tried a 47-ohm resister in series with one power line at 12v and the noise level dropped by 10dBA.

Obviously less air will be moved about but it should still be enough to keep the machine cool.

Dennis V Long

A There are a few things you can do. First of all, try a 47-ohm 2.5W resistor in series with the fan. This slows it down a little and reduces the noise a lot. Few systems really require the fan to go at full blast. Another thing to watch for is that fans should not suck (or blow) through slots in a case. This causes a lot of high pitched noise as the blades cut through the streams of air from each slot. The correct way to fit a fan is with a matching finger guard bolted over a hole in the case. Another thing to look out for is that the case itself may transmit a lot of noise from the fan motor. Some manufacturers don't bolt the fan directly to the side of the case for this reason. Experiment with rubber mountings or sticking the fan in with double sided tape. All this made a big improvement to my 'Third Coast' hard disk.

G Craig

Type Art

Franco Turra - Forum STA 24

A Type Art is the new Calamus SL font editor. It should be available from Halco.

Nial Grimes

Publisher2 and Line_arc

Jim Cruise - Forum STA 24

A I recently encountered the same problem as Jim Cruise. My solution was to use Superboot (available on ST Club PD disk UTI.156). This allows me to leave Line_arc in the Auto folder, but 'switch it off' at boot-up or after a reset when about to use Timeworks. In effect, Superboot does the tedious work of renaming .PRG files to .PRX for you. This certainly works OK on my system and should help Jim overcome the problem. If anyone has a different solution, I (and I'm sure Jim as well) would like to hear it.

Bill Brand

A Jim Cruise will, no doubt, have been flooded with advice to use a boot-up utility to solve his problems with LINE_ARC.PRG and GDOS. However, beware of using such programs in conjunction with Calligrapher. I have tried several and all bar one have caused some sort of corruption problems. Superboot (7.2) used to re-write the ASSSIGN.SYS file with the one I use with Hyperpaint and Hyperdraw resulting in the wrong driver being loaded.

The only boot-up program I have been able to get to work properly with Calligrapher (out of three tried) is Mouseboot, recently given away on a mag cover-disk. It isn't quite as comprehensive as Superboot but there isn't the problem of having two Assign files active at the same time.

Chris Tofalos

Printer Drivers

I I am compiling a disk of printer drivers which work properly, at 360x360 dpi, with the Canon BJ10e (not BJ10ex). This consists of a few successfully altered drivers in their own folder, which has the application name, along with a text file of information with Programme name, Driver name, DIP switch settings and paper position. If any of your readers would like to contribute their efforts I will be pleased to sort them out, put them on a disk, and put it into the ST Club PD library. You could perhaps keep me right regarding copyright on modified commercial drivers.

Raymond Gilbert

● Virtually all printer driver files are copyright to the software house that created them: strictly speaking you should not modify any copyrighted files without permission from the copyright holder. In practice, the vast majority of software houses are happy for users to modify printer driver files for their own use, and many encourage the distribution of printer drivers for their software via PD libraries and BBS systems. Where there are already disks of drivers for an application in PD libraries then you can pretty safely distribute your own versions of these drivers; in other cases it would be wise to check with the software publishers before distributing your own drivers. Where permission is not forthcoming you could supply the details of the modifications that need to be made to the driver, or supply a patch file using a package such as the ZAP Update Maker on our disk DMG.30

Cut Sheet Feeder

Douglas Orchard - Forum STA 22

I I can sympathise with Douglas Orchard; I suffered hours of frustration trying to solve the same problem of getting First Word Plus to print on single sheets. In my case the printer was a Star LC10 in semi-automatic single sheet feed mode rather than with a multiple sheet feeder but I am sure the problem is the same.

In this mode, the paper is fed about an inch beyond the printing head before it starts to print; at the other end the paper-out detector halts printing a similar distance from the end. This means that a sheet of A4, 70 lines long at the usual 6 lines per inch, has minimum top and bottom margins of 6 lines, leaving only 58 lines for any additional margin, header or footer defined by FWP, and the actual text.

I suggest setting the paper length in FWP at 58 lines and the top and bottom margins at 0: FWP will then send a form feed before the paper out detector operates and the sheet feeder should eject the paper and feed in another sheet. Having no multiple sheet feeder, I have my page length set at 70 with no top margin and a 12 line bottom margin, which adds up, or subtracts down, to the same 58 lines. The generous bottom margin ensures that the paper is ejected without having to use manual line or form feeds which can confuse the poor printer. The Epson might need less (or more) space at top or bottom so it would be worth experimenting.

If the paper length is set too long the printer will emit a "paper out" squeal and stop printing before the form feed at the bottom of the "page" as set up by FWP. The next line will be printed on the next sheet. The reason it continues to print one line per page is difficult to explain within the space of a Forum contribution. Briefly, most FWP printer drivers advance the paper, not with the relative command LINEFEED ("move down one line"), but with the absolute command VERTICAL TAB ("Move to line X"). This works only if FWP and the printer agree where line 1 is, which is not the case in the circumstances described above.

You can disable the paper out detector to squeeze more lines in at the bottom, but, if things go wrong, the pins will be left hammering away at a bare roller. In a document like a thesis you will probably want to print headers and footers in the inch at top and bottom and the only way to do this is to use continuous paper. (Can anyone tell me whether bubble jets set large margins like this or will they print up to the top and bottom edges like lasers?)

Readme files do not cause this problem because they usually have no form feeds to define page ends, or are set up for 11" long pages, shorter than A4, leaving a margin of safety.

Alan Kennedy

Shareware Scoundrels?

I I sent a $20 registration for ST Type to: Magnum Software at 2871 S 124th St, Milwaukee WI 53227 USA in February and I have not even had the ordinary courtesy of a simple acknowledgement despite two follow up letters.

E O Frimpong

Shareware Successes

I It is easy to register BStat, as Bob Wilson will accept Travellers' Cheques, and worthwhile. Once I'd got GDOS working, via the ST Club disk for Opus, the printouts on the BJ10e were superb. I'd also like to commend FastBase - again registration is easy, swift and gives you an even better program.

John Henderson

PC versus Atari

I While I agree with much of Michael Baxter's views on this subject I think he overstates the wonders of the PC world, where, in a mad and self-defeating inflationary spiral, software expands as fast as the hardware. It is now possible to buy a 50MHZ 486 with 4MB RAM and a 200MB hard drive for under £2000 but you will need all of that to run many applications under Windows and the newer operating systems on the horizon threaten to demand at least 8MB of memory.

In the PC world it is now all but impossible to do without a hard disk - even the programmes on cover disks often have to be installed to hard disk to run. In the Atari world 1MB is still quite generous unless you have masses of fonts or deal in large bitmap images or sampled sound. With a PC you can load Windows 3.0 and Excel into 1MB but you won't be able to load a file: with 2MB you can work, albeit slowly, on a 286 machine.

The Windows interface is clumsy compared with the Mac desktop or even the much-maligned Atari GEM. One of my colleagues at work actually finds PC GEM more amenable than Windows despite the lack of the overlapping resizeable windows that ST users enjoy.

Even writers in PC journals admit without prompting that MSDOS is a dinosaur; such journals spend an inordinate amount of space discussing the intractable problems of memory management, which, for example, make it impossible for us to run GEM applic-

ations on a machine connected to the network because GEM needs so much conventional memory. ST and Mac users simply add memory and use it, without having to grapple with extended and expanded memory managers, loading high, etc.

It may be, even if MB has to desert to the PC for the moment, that the alternative platforms may have the last laugh, though I believe the Archimedes has the most going for it. The PC dominates not by merit, but by sheer weight of inertia and the commercial might of its sponsors, effectively now Microsoft, rather than IBM.

Alan Kennedy

I After many months of agonising, I have decided to abandon my ST in favour of a 486 PC. Before you all reach for your knives, let me give my reasons.

1) As a freelance programmer, I need to keep up with the latest languages and environments. Buying a PC and teaching myself C++, Visual basic, Windows programming, etc, should (I hope) make me a more marketable commodity.

2) The recent price collapse of PC clones has made upgrading to a PC very cost effective.

3) It is a sad fact that the PC is now ahead of the ST in the games arena. As a flight sim enthusiast I owe it to myself to try out Falcon 3 and F117A Stealth Fighter (neither of which is likely to be released for the ST). The fact that PC games are nearly all HD-friendly while most ST games are not is particularly galling.

4) In my profession, people do not take you seriously unless you have a PC or a Sun workstation. Very sad, as the ST is a very capable all-rounder which I would still recommend to the serious beginner.

5) The computer press have been raving on for months about the "Next big thing from Atari". Since my youthful exuberance gave way to jaded cynicism way back when the STE hit the streets, I'll believe it when I see it.

Having used PCs at work in the past, I have no illusions about them. GEM is more efficient than Windows, and as for DOS, well! However, the PC offers a good price-performance ratio, and ...er... everyone uses them. As ridiculous as the latter sounds, it is, for me, a powerful reason.

If the Falcon lives up to its expectations, I'll probably see you all again in a year or so.

Stephen Murgan

I I read Michael Baxter's article in the August issue - "Power without the Price" - with great interest. I too have been a dedicated ST user for some years, buying my first machine in 1985. When the TT was launched, I eventually upgraded, but the upgrade decision was taken after a year's serious thought and research into the alternatives.

My work as a professional commercial/industrial writer requires word processing, DTP, graphics and database software, and speed is of the essence, as I am invariably working to deadlines. I also require, on a regular basis, to produce my work as PostScript files on floppy disk for direct output to a typesetter - usually an Agfa 9000 series machine. Head office operates Macintoshes, and I will eventually require compatibility with their network. Hobbies often require the use of PC software.

So in 1991, I chose the TT because:

a) I had made a fairly large investment of time and money in ST/TT software.
b) It gave me PostScript compatibility, as most good ST/TT DTP software can output PS files.
c) Spectre GCR and the newer hardware PC emulators had become reliable, offering the potential of Mac and PC compatibility.
d) I don't like the C:/ prompt and MS DOS baffled me.

Twelve months on, my work has moved on, and my skills have also improved, resulting in more complex PostScript files for the typesetter. PS files output from PageStream 2 and Fleet Street Publisher are a little idiosyncratic, and the typesetter was only succeeding in reading around 75% of my files. As each such failure cost time, it became a problem.

So, three months ago, enticed by its incredible price, I took the PC plunge with the Amstrad 2386DX. This much maligned machine was part of Alan Sugar's recent massive inventory dump, and came with a 20MHz clock speed, 4Mb of RAM, a 65Mb hard drive, DOS 4.01, Windows 3, Lotus 1-2-3 for Windows, Freelance Graphics for Windows, and AmiPro v2 - all for £599 plus VAT! At that price, I reasoned, it didn't matter if I didn't like it, and I could always use it as a back-up working machine if the TT went down.

Needless to say, I am still learning to use it effectively, and am not yet in a position to make a direct comparison between the two machines on any scientific basis. However, from a highly subjective point of view, commonsense and instinct tell me that:

a) PC software is far in advance of that available even now for the TT. The AmiPro word processor can do things that PageStream can't - it's awash with features that I do actually use, such as charting, a thesaurus and a macro language - and it supports Object Linking and Embedding.
b) There is a quantum leap in quality between ST/TT PD and shareware and that available for the PC.
c) Windows (which I have now upgraded to 3.1) knocks the TT's TOS/GEM GUI sideways in functionality and ease of use.
d) When Windows generates PostScript files, it means PostScript files - every time.
e) Information sources, including magazines, are far more widely available.
f) The standard 1.44Mb floppy on the PC can be read by Mac Superdrives, and so data can be transferred to the Mac if it is in ASCII, Pagemaker or PostScript format. (I have only proved the first method as yet!)
g) Existing WP and DTP files on the TT, produced by ST/TT software, can all be transferred to the PC as ASCII files via 720k floppies. Removing the formatting codes is tedious, but better than retyping all the text.

But what about the legendary disadvantages of the PC? I am not a complete convert, and the TT is still in daily use, performing tasks that I have not yet learned how to do with my PC software, and running Superbase 2 - and yes, I do know it's a waste! So what's wrong with the PC?

a) It's SLOW! With an archaic software operating system, which in turn loads a software GUI, which in turn loads applications software, I suppose it couldn't be anything but slow. Without Windows, running, say WordPerfect v5.1 in DOS, the PC is speedy enough, but have you ever used WPv5.1? YUKKK - even ST Writer is more user-friendly! And in any case, having been brought up, so to speak, with GEM, Windows is a must.
b) Windows software is excruciatingly expensive. However, it has to be said that apart from the Windows upgrade, I haven't bought any yet, as the Lotus package I got with the machine is very capable. Added to the accessories that come with Windows itself - MS Writer, a text editor, Cardfile, a clock, a calculator, macro recorder, a comms program, etc - I have quite a reasonable library of software. But when Quark Express for Windows comes along, it's going to cost me more than the PC did!
c) PC power requirements are high: a 65Mb drive is not big enough, 20MHz is not fast enough, and 4Mb of memory is chickenfeed. Compare this with the TT, where the 68030 is more than twice as fast (not only half as fast again, as the difference between 20 and 33 MHz might lead you to believe), my 48Mb drive is still only half full, and 4Mb is more than enough RAM to be going on with.
d) The PC/DOS/Windows environment is still not too stable. My TT hardly ever falls over, and only then when running Pagestream, but a PC running Windows needs careful handling if things are not to go disastrously wrong. This may be partly due to the entire operating system being in easily corruptible RAM. I now take advantage of every automatic save facility and set it to five minutes, and have two floppies containing my entire boot drive so that I can reboot from floppy and still access my hard drive!

On balance then - which machine? Reluctantly, I have to say, the PC. Not my PC - it's just not powerful enough - but a fast 486 with at least 8Mb of RAM and 180-200Mb hard drive. Such a machine would be cheaper than a TT, and would include a super VGA colour screen as well, which is more than the TT price does.

Sad but true. Without software development to the standard of mainstream PC programs, the TT - at any price - has no future other than in the niche markets of specialist DTP and MIDI. And it doesn't even have a future in the DTP market unless PageStream is stabilized and improved, or Calamus becomes PostScript compatible. What a shame.

Wendy Durham

DESKTOP DISCUSSIONS

Structured Programming

Adopting a systematic method for program design can save significant amounts of coding time. William Hern reviews a new book from Kuma which explains an easy yet flexible approach.

Having been a programmer for ten years, I'm painfully aware of the dangers of sudden inspiration. You know how it is, I'm sure - all at once you get the idea or motivation for a piece of software. Without so much as pausing to write down the title of the program, you hit the computer and begin writing code. "Shouldn't take too long," you think to yourself. "Get it done in an hour or so, no problem...."

Three hours later you've hit an impasse. The program is not behaving properly and you can't find the bugs. You're beginning to loose control of the code as you chop and change lines in a desperate bid to correct things. The distinction between variables begins to blur and eventually you decide to quit for the night, swearing to completely rewrite the code in the morning. Yet another evening's coding has been wasted.

Structured programming is all about avoiding the above scenario. By carefully and logically planning out the design of your program on paper first, the actual coding stage is made much simpler. As any errors in logic should be caught in the design phase, the only bugs that could exist in the code (at least theoretically) are the result of mistyping and other forms of mechanical error.

Paul Overaa's new book "Program Design Techniques for the Atari ST", part of the growing number of publications from Kuma, presents one technique for structured programming - Warnier diagrams. Overaa has been using it for over ten years and claims that it greatly simplifies software design. As the book is specifically for the ST - something of a rarity these days - I just had to feature it in the column.

Warnier diagrams are a form of top-down program design. Brackets are used to group sets of operations that are performed in sequence together. Individual operations may be broken down into sub-operations by use of further brackets. Every operation has a number associated with it, indicating how many times it is to be executed. In cases where the number is non-determinable, the upper range on the loop can be left as a variable.

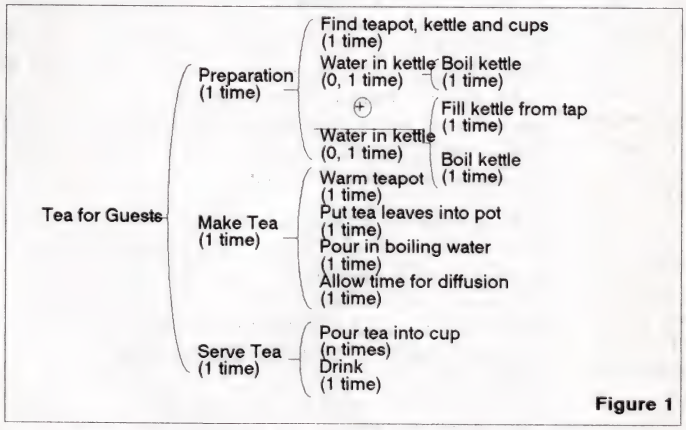

Figure 1

For the benefit of Nutrimatic Drink machines everywhere, Figure 1 shows an example Warnier diagram for making a pot of tea for guests. It includes the three basic 'building blocks' of programming - sequence, alternation and repetition. Operations within one bracket are executed in strict sequence, starting at the top.

Operations which are linked by the plus within a circle sign (the exclusive OR symbol) are conditional statements. The line over the operation indicates that it means the logical opposite (i.e. a line over the statement FILE EXIST would mean "file does not exist").

Operations which are executed an unknown number of times have a variable instead of a number in their times executed field. For example, the operation POUR TEA INTO CUP in Figure 1 is executed n times, where n is the number of cups.

It's not just the structure of the program that can be specified using Warnier diagrams. The data structures used can also be broken down in the same manner so that the programmer can integrate the description into the program details and define explicitly the relationship between code and data.

Overaa dedicates a great deal of space, nine chapters no less, to describing how to convert the final diagrams into actual code. Examples are given in Basic, C and Assembler, and although the book includes separate chapters describing them, you won't be able to learn the languages from them.

To justify the ST specific title, Overaa details the GEM user interface in a chapter and how to write interface-independent software. To be honest, the chapter feels as if it was tacked on and I wonder if Kuma decided that a set of machine-specific titles would sell better than one machine-independent publication.

While the content of the book is good, I'm less happy with its presentation which, in places, is just plain shoddy. Some of the diagrams are a little on the untidy side and the layout could be better. More exhaustive proof reading would also help. I counted numerous typos and a couple of sentences that said the opposite of what the author intended.

These minor criticisms aside, I'm very impressed with the book. While Warnier diagrams may be one of the simpler structured programming techniques, I don't see this as a weakness. A structural programming method is useless if the designer spends most of the time struggling to stay true to the technique rather than concentrating on the design itself. Paul Overaa's book provides a comprehensive introduction to this flexible design method.

William Hern

"Program Design Techniques for the Atari ST" (ISBN 07457 0029 2) is written by Paul Overaa and published by Kuma Computers Ltd. It costs £14.95.

Programmers' Forum

In this month's edition of ST Applications' regular programming column, we take a look at fixing Signum! printer drivers to work with the Canon BJ10ex, and feature a simple C program for beginners.

Hot news

Before we start into this month's selection of programming issues, an item of news which may be of interest to some readers: Programmers' Forum is now accessible by email. Contributions can be sent by email to my account on CIX, (user ID: 'jonellis'). See the introductory panel on the Forum pages for more details of what CIX is and how to talk to it. Those with access to the academic network JANET can make contact using the address 'jonellis@uk.co.compulink.cix'.

Canon BJ10ex Signum! printer drivers

In a recent review of the Canon BJ10-ex bubblejet printer (page 12, STA 21), **Nigel Rheam** mentioned a problem with using Signum! to drive the printer in Epson LQ-emulation mode (360 x 360 dpi). In short, there is an incompatibility between Signum's and Canon's idea of Epson compatibility. Nigel explains:

...many of the Epson LQ series of printers have a control code 'ESC+n' which sets a line feed of 'n'/360 inch. The problem with Signum in particular is that whilst its printer drivers are set up for Epson compatibles, it uses the NEC control codes for 360th inch line feed, which is 'FS3n' ($1C, $33, n). So what I want to be able to do, in a nutshell, is to set up a program which intercepts messages going out to the parallel port, and intercept and replace the hex '1C,33' sequence for '1B,2B'.

This problem is deceptively awkward. It is easy enough to hook into the BIOS vector to trap the Bconout function for the parallel port - see Listing 1 for a fragment showing how this could be done. However, we cannot just replace all $1C,$33 sequences with $1B,$2B. Although this would fix the line spacing bug, as a side effect it would also corrupt any graphics data that happened to contain a $1C,$33 sequence.

The obvious way around this problem is to turn off the translating code while graphics data is being sent. This requires that we monitor the output stream for graphics codes. In general, Epson graphics codes have the form:

`<ESC>,<Command>,N1,N2`

where <Command> specifies the graphics mode (single density, double density, etc). The control code is followed by N2 * 256 + N1 bytes of graphics data, none of which should be altered by our filter. In theory, it is possible to write some code to detect all possible graphics codes (the BJ10ex supports over 20!). However, there are other similar control codes that introduce graphics-like data, such as those used to set user-defined characters. These too would have to be processed, further complicating the program.

Even worse, we have not considered the possibility of a $1C,$33 sequence arising from the juxtaposition of a control code such as <ESC>,<Command>,$1C and data beginning with a $33 byte.

In short, what appeared to be a straightforward solution to Nigel's problem is actually rather cumbersome and awkward. Are there any alternative solutions? An attractively 'clean' fix is to obtain a Signum! printer driver that uses the correct printer code to set the line spacing. Such an approach would remedy the problem at source, with no side effects. Unfortunately, Signa were unable to provide Nigel with a suitably modified driver. This leaves us with the prospect of having to patch the driver ourselves.

Patching programs

I am sure that many readers of this column will have some experience of patching software with a disk editor. These utilities are invaluable for editing embedded resource data such as might be required for translation of a foreign PD program. To patch a program using a disk editor, one simply does a 'search and replace' operation on the disk file. In this instance, the editor would be asked to find a $1C,$33 sequence, and to replace it with $1B,$2B.

However, a search of the Signum! printer driver for the sequence $1C,$33 was fruitless, suggesting that the printer data must be embedded within the code, perhaps in a form like:

```
move.b      #$1C,d0
bsr         send_to_printer
move.b      #$33,d0
bsr         send_to_printer
```

In such situations, the only remaining option is to reach for a disassembler. Disassemblers are programs which take in executable code, and attempt to reconstruct the assembly language source code. The success of this operation depends to a large extent on the sophistication of the disassembler and the nature of the file under scrutiny.

Although the printer driver program is not small (some 30K of executable code), it disassembled fairly easily. A quick scan of the code revealed a region very similar to that shown above. After modifying the source to include the new control code, re-assembly produced a printer driver that works perfectly in 360 x 360 dpi mode with the BJ10ex!

The last remaining problem is distribution of the fixed printer driver. It is impossible to simply put the driver onto a public domain disk, as it contains code covered by copyright. However, what can be done is to release details of the changes so that Signum! owners can modify their own copy of the driver.

The PATCH program

Table 1 lists the alterations that need to be made to the Signum 24-pin printer driver (PR24N.PRG) to enable it to work with the BJ10ex. These amendments can be made using a disk editor, or the PATCH program presented in Listing 2.

PATCH should be useful for patching any file, not just the Signum! printer driver. It is written in standard C, and does not use GEM at all. As a straightforward C program, it should be a useful example for those starting to learn C. To help C beginners get the most from the program, we will discuss its operation in rather more detail than usual.

After displaying some introductory text, the program prompts the user to enter the pathname of the file to be modified. User input is collected using the fgets() library function. This was chosen instead of the simpler gets() function, as it produces a more robust user interface. gets() does not check that the input will fit in the array provided by the programmer. If the user types more characters than expected, the extra characters will overrun the end of the array, possibly causing a crash. fgets() allows the programmer to limit the

number of input characters to the size of the array. However, under some circumstances, fgets() may fail to null-terminate the input string. Therefore the program ensures that the string is properly terminated by setting the last element of the array to '\0'.

The filename supplied by the user is passed to the read_file() procedure so that the target file can be loaded. The file is opened for reading using the standard fopen() library function. If it cannot be opened (most likely because the wrong filename was entered!), a message is printed to one of the standard output streams: stderr. The stream is normally attached to the screen, so the message will appear on the monitor. An error code (NULL) is returned to inform the calling function that there has been a problem.

Once the file has been opened successfully, the program needs to find out how much memory must be allocated to hold the file. This *could* be done using some of the low-level GEMDOS functions. A more portable solution is to use the standard C library functions. The fseek() function is used to move the 'current position' to the end of the file, and then ftell() is invoked to determine how far the 'current position' is from the start of the file. Having thus obtained the length, we simply rewind the 'current position' back to the file start, allocate an appropriate block of memory with malloc(), and read in the data. Any errors that crop up during these operations are flagged by printing a message to stderr, and returning NULL. A successful outcome is signalled by returning the address of the memory block that holds the data. Note that read_file() also needs to inform the calling function of the size of the input file. This is done by using a pointer to store the data into one of the caller's variables.

Checksums and program validation

One potential problem with publishing patches is that there may be different versions of the target program in circulation. Changes that fix bugs in one version may wreck another version, because the target code has changed. How can we be sure that we are applying the right patches to the right version of the program?

One way is to compute a 'signature' which will uniquely identify the target program. Such signatures are often termed 'checksums'. There are many different types of checksum; one of the better ones is called a Cyclic Redundancy Check (or CRC). By calculating a CRC for the file when it is read in, and checking it with one provided with the patch information, we can be sure that the right patches are being applied to the right target.

The CRC is calculated by the calculate_CRC() function (surprise, surprise!). The mathematics of the calculation are complicated, so to keep the program simple, a look-up table approach is used. The table and look-up function are taken from work released into the public domain by Stephen Satchell and Mark Mendel. The function simply runs through the input data buffer, looking up the CRC value for each byte. The final answer is a 16-bit number which we can use to check that the patch data and input file go together.

The standard library function scanf() is used to obtain the expected CRC value from the user as a hexadecimal number. If the user's input is not a valid number, the request for input is repeated. If the CRCs match, enter_patches() is called to enable the alterations to be made. This function contains a simple loop which requests the position of a change (as a hex offset), checks that it lies within the file, displays the current value at that position, and allows the user to enter a new value.

User input is collected by two different methods in this function: by fgets() and scanf(). In the inner do-while loop, we need to check for two different kinds of data: string data ('END' which is entered to terminate the function) and hex digits. To do this, input is obtained by fgets(), and then inspected using sscanf(). sscanf() is just like scanf() but takes its input from a string rather than the stdin stream. The fflush() calls ensure that each user interaction starts with a clear input buffer.

Finally, after all the changes have been made, the modified file must be saved back to the disk. Before this is done, the program performs a second CRC check to ensure that the correct changes were made, again obtaining the expected CRC value from the user. If all is well, the user is prompted for a name for the modified file, and write_file() is called to copy the buffer contents to disk. Before writing the data, write_file() checks that there is no file with the same name already on the disk. This is done by attempting to open the file for reading: if the fopen() call succeeds, the file already exists. In this case, the user is asked whether the existing file should be overwritten.

Although the program performs its job well enough, the interface could certainly be made more friendly. At present, any error causes the program to terminate - perhaps it could simply return to the beginning or to some intermediate point. Such enhancements are (as all the most irritating textbooks say) left as an exercise for the reader (grin)!

Table 1

Data for patching Sigum! 24 pin driver to work with the Canon BJ10ex in 360 x 360 dpi mode

Input file checksum:	$5807
Changes:	
Offset $2A46:	Change $001C to $001B
Offset $2A50:	Change $2033 to $202B
Output file checksum:	$12E9

Porting to other compiler and assembler systems

This month's listings are straightforward and should port onto other compiler/assembler systems without major problems. Listing 2 makes use of a single non-ANSI library function: stricmp(). This behaves just like strcmp(), except that it performs a case-independent comparison of its two input strings. The objects declared as 'unsigned short' in Listing 2 should be unsigned 16 bit integers - this declaration may need changing for non-Lattice compilers.

Next month

Next month *Programmers' Forum* will print more questions and tips from readers' letters. Keep the letters coming in - the more we receive, the better the column gets! Hints on any subjects, or questions about programming problems, should be sent to the address below. All contributions, no matter how simple or advanced, are most welcome. Please include your address on the letter, so I can get back to you if anything in your contribution is unclear. E-mail addresses are useful too.

Please send a disk (or email) if there are large chunks of text or ASCII source code: I have no time to retype lots of material. Naturally, disks will be returned if an SAE is included.

Jon Ellis
Programmers' Forum
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Bricket Wood
St Albans
Hertfordshire
AL2 3SR
Email: jonellis@uk.co.compulink.cix

```
**
** Listing 1.
** Programmers' Forum STA 25 (January 1993)
**
** Program fragment showing how to hook into the
** BIOS (trap #13) vector to intercept Bconout
** calls for the parallel port.
**
** Assembler system: MCC ASSEM v12
** Written on 3rd November 1992
**
**

_longframe      equ     $059E   Set to non-zero for 68010 or later
```

```
                .
                .

                dc.l    'XBRA'          Standard XBRA header block.
                dc.l    XBRA_ID         Whatever identifier you like.
old_BIOS        dc.l    0               Space for old vector value.

new_BIOS        lea     6(sp),a0        Address the arguments on the stack.
                tst.w   _longframe.w    Is the processor a 68000 ?
                beq.s   1$              Skip on if so.
                addq.l  #2,a0           Account for extra word on long stack.
1$              btst    #13,(sp)        Called from supervisor mode ?
                bne.s   2$              Skip on if so, argument ptr is OK.
                move    USP,a0          Get arguments off user stack.
2$              cmp.l   #$30000,(a0)    Bconout call for parallel port ?
                beq.s   print           Yes, so do it.
```

```
        move.l    old_BIOS(pc),a0     Fetch address of next BIOS handler
        jmp       (a0)                and hand the call off.

**
** Function to handle Bconout calls on the
** parallel port.
**    Inputs:       ** SUPERVISOR MODE **
**                  a0  -> stack frame for Bconout call.
**    Outputs:      d0.l = 0 if printer timed out, else OK.
**    Destroys:     d0-d1/a0-a1
**

print     move.w    4(a0),d0            Fetch char to be output into d0.b.
          .
          .
          .
          rte                           Return with correct status code.


/*
** Listing 2.
** Programmers' Forum STA 25 (January 1993)
**
** Quick sketch of program for patching executable files.
** File validation is performed using CRC checksum code
** developed by Stephen Satchell and Mark Mendel.
**
** Compiler system: Lattice C v5.52
** Compile options: -cargfku
**  Meaning: Enable ANSI mode, disable trigraphs, enable
**           non-ANSI keywords, assume unsigned chars
** Link with C.O and LC.LIB
** Written on 8th November 1992
*/

#include <portab.h>
#include <stdio.h>
#include <stdlib.h>
#include <string.h>


/*
** Define useful symbols...
*/

#define MAX_INPUT   200

/*
** Macro function to calculate the running 16bit CRC
** function. Macro derived from article Copyright (C) 1986
** Stephen Satchell. Programmers may incorporate any or all
** code into their programs, giving proper credit within the
** source. Publication of the source routines is permitted so
** long as proper credit is given to Stephen Satchell, Satchell
** Evaluations and Chuck Forsberg, Omen Technology.
**
** The function accepts two arguments: the existing CRC value
** and that of a byte to be included (must be in range 0-255).
** Note that the ongoing CRC value is referenced twice. The function
** returns an updated CRC value.
*/

#define update_crc16(octet,crc) (crc_tab16[(((unsigned short)crc>>8) \
          &0xFF)] ^ ((unsigned short)crc<<8)^(unsigned short)octet)


/*
** 16 bit CRC table calculated by Mark G. Mendel,
** Network Systems Corporation
*/

unsigned short crc_tab16[256] = {
    0x0000,  0x1021,  0x2042,  0x3063,  0x4084,  0x50A5,  0x60C6,  0x70E7,
    0x8108,  0x9129,  0xA14A,  0xB16B,  0xC18C,  0xD1AD,  0xE1CE,  0xF1EF,
    0x1231,  0x0210,  0x3273,  0x2252,  0x52B5,  0x4294,  0x72F7,  0x62D6,
    0x9339,  0x8318,  0xB37B,  0xA35A,  0xD3BD,  0xC39C,  0xF3FF,  0xE3DE,
    0x2462,  0x3443,  0x0420,  0x1401,  0x64E6,  0x74C7,  0x44A4,  0x5485,
    0xA56A,  0xB54B,  0x8528,  0x9509,  0xE5EE,  0xF5CF,  0xC5AC,  0xD58D,
    0x3653,  0x2672,  0x1611,  0x0630,  0x76D7,  0x66F6,  0x5695,  0x46B4,
    0xB75B,  0xA77A,  0x9719,  0x8738,  0xF7DF,  0xE7FE,  0xD79D,  0xC7BC,
    0x48C4,  0x58E5,  0x6886,  0x78A7,  0x0840,  0x1861,  0x2802,  0x3823,
    0xC9CC,  0xD9ED,  0xE98E,  0xF9AF,  0x8948,  0x9969,  0xA90A,  0xB92B,
    0x5AF5,  0x4AD4,  0x7AB7,  0x6A96,  0x1A71,  0x0A50,  0x3A33,  0x2A12,
    0xDBFD,  0xCBDC,  0xFBBF,  0xEB9E,  0x9B79,  0x8B58,  0xBB3B,  0xAB1A,
    0x6CA6,  0x7C87,  0x4CE4,  0x5CC5,  0x2C22,  0x3C03,  0x0C60,  0x1C41,
    0xEDAE,  0xFD8F,  0xCDEC,  0xDDCD,  0xAD2A,  0xBD0B,  0x8D68,  0x9D49,
    0x7E97,  0x6EB6,  0x5ED5,  0x4EF4,  0x3E13,  0x2E32,  0x1E51,  0x0E70,
    0xFF9F,  0xEFBE,  0xDFDD,  0xCFFC,  0xBF1B,  0xAF3A,  0x9F59,  0x8F78,
    0x9188,  0x81A9,  0xB1CA,  0xA1EB,  0xD10C,  0xC12D,  0xF14E,  0xE16F,
    0x1080,  0x00A1,  0x30C2,  0x20E3,  0x5004,  0x4025,  0x7046,  0x6067,
    0x83B9,  0x9398,  0xA3FB,  0xB3DA,  0xC33D,  0xD31C,  0xE37F,  0xF35E,
    0x02B1,  0x1290,  0x22F3,  0x32D2,  0x4235,  0x5214,  0x6277,  0x7256,
    0xB5EA,  0xA5CB,  0x95A8,  0x8589,  0xF56E,  0xE54F,  0xD52C,  0xC50D,
    0x34E2,  0x24C3,  0x14A0,  0x0481,  0x7466,  0x6447,  0x5424,  0x4405,
    0xA7DB,  0xB7FA,  0x8799,  0x97B8,  0xE75F,  0xF77E,  0xC71D,  0xD73C,
    0x26D3,  0x36F2,  0x0691,  0x16B0,  0x6657,  0x7676,  0x4615,  0x5634,
    0xD94C,  0xC96D,  0xF90E,  0xE92F,  0x99C8,  0x89E9,  0xB98A,  0xA9AB,
    0x5844,  0x4865,  0x7806,  0x6827,  0x18C0,  0x08E1,  0x3882,  0x28A3,
    0xCB7D,  0xDB5C,  0xEB3F,  0xFB1E,  0x8BF9,  0x9BD8,  0xABBB,  0xBB9A,
    0x4A75,  0x5A54,  0x6A37,  0x7A16,  0x0AF1,  0x1AD0,  0x2AB3,  0x3A92,
    0xFD2E,  0xED0F,  0xDD6C,  0xCD4D,  0xBDAA,  0xAD8B,  0x9DE8,  0x8DC9,
    0x7C26,  0x6C07,  0x5C64,  0x4C45,  0x3CA2,  0x2C83,  0x1CE0,  0x0CC1,
    0xEF1F,  0xFF3E,  0xCF5D,  0xDF7C,  0xAF9B,  0xBFBA,  0x8FD9,  0x9FF8,
    0x6E17,  0x7E36,  0x4E55,  0x5E74,  0x2E93,  0x3EB2,  0x0ED1,  0x1EF0
};


/*
** Function declarations...
*/

extern int stricmp(char *,char *);      /* Not part of ANSI library */

int main(int,char **,char **);
int write_file(char *,char *,long);
char *read_file(char *,long *);
unsigned short calculate_CRC(char *,long);
void enter_patches(char *,long);


/*
** The program starts here...
*/

int main(argc,argv,envp)

int argc;
char **argv, **envp;

{
    char *buffer;
    char filename[MAX_INPUT+1];
    long length;
    unsigned short checksum, input_CRC;

    puts("\nPatch program v1.00");
    puts("Modifications to 8th November 1992\n");
    printf("File to be patched: ");
    if (fgets(filename,MAX_INPUT-1,stdin) == NULL)
        return(1);
    filename[MAX_INPUT] = '\0';
    puts("Reading input file...");
    if ((buffer = read_file(filename,&length)) == NULL)
        return(1);

    checksum = calculate_CRC(buffer,length);
    do
        {
        fflush(stdin);
        printf("\nEnter CRC for input file: $");
        }
    while (scanf("%hx",&input_CRC) != 1);
    if (input_CRC != checksum)
        {
        fputs("Input file checksums do not match !\n",stderr);
        return(1);
        }
    else puts("Input file checksums matched\n");

    enter_patches(buffer,length);

    checksum = calculate_CRC(buffer,length);
    do
        {
        fflush(stdin);
        printf("\nEnter CRC for patched file: $");
        }
    while (scanf("%hx",&input_CRC) != 1);
    if (input_CRC != checksum)
        {
        fputs("Patched file checksums do not match !\n",stderr);
        return(1);
        }
    else puts("Patched file checksums matched");

    fflush(stdin);
    printf("Enter name for output file: ");
    if (fgets(filename,MAX_INPUT-1,stdin) == NULL)
        return(1);
    filename[MAX_INPUT] = '\0';
    puts("Writing output file...");
    if (write_file(filename,buffer,length) == TRUE)
        puts("File written successfully");
    else puts("File output abandoned");
    free(buffer);
    return(0);
}


/*
** Function to read a specified file into memory.
** The arguments are a pointer to a full pathname for
** the file and a pointer to a variable to hold the
** file size. The function checks that the file
```

```
** exists, and then determines its size.  Malloc
** is used to reserve a buffer of suitable size,
** and then the file is read in.  Any error in
** this process results in a message being printed
** to stderr, and the return value is NULL.  The
** value of *len in such cases is not defined.
** Successful operation results in the return of a
** pointer to the file buffer and *len is set to
** the size of the file.
**
** Usage:   buffer = read_file(name,len);
**
**          char *buffer, *read_file();
**          char *name;
**          long *len;
*/

char *read_file(name,len)

char *name;
long *len;

{
    FILE *fp;
    char *buffer;

    if ((fp = fopen(name,"rb")) == NULL)
        {
        fputs("Error while attempting to open file\n",stderr);
        return(NULL);
        }
    if (fseek(fp,0,SEEK_END) == -1)
        {
        fputs("Error while seeking to end of file\n",stderr);
        return(NULL);
        }
    if ((*len = ftell(fp)) == -1)
        {
        fputs("Error while determining the file length\n",stderr);
        return(NULL);
        }
    if (rewind(fp) == -1)
        {
        fputs("Error while seeking to start of file\n",stderr);
        return(NULL);
        }
    if ((buffer = malloc(*len)) == NULL)
        {
        fputs("Error in memory allocation\n",stderr);
        return(NULL);
        }
    if (fread(buffer,*len,1,fp) != 1)
        {
        fputs("Error while reading in file data\n",stderr);
        return(NULL);
        }
    fclose(fp);
    return(buffer);
}


/*
** Function to calculate the 16-bit CRC checksum
** for a buffer using the Satchell/Mandel code.
** The arguments are a pointer to the buffer start
** and its length.  The return is the checksum.
**
** Usage:   check = calculate_CRC(buffer,length);
**
**          unsigned short check, calculate_CRC();
**          char *buffer;
**          long length;
*/

unsigned short calculate_CRC(buffer,len)

char *buffer;
long len;

{
    unsigned short CRC;

    for (CRC=0; len; len--)
        CRC = update_crc16(*buffer++,CRC);
    return(CRC);
}


/*
** Function to allow the user to enter the
** patches required to alter the input file.
** The arguments are a pointer to the buffer
** containing the data and its length.  There are
** no return values.
**
** Usage:   enter_patches(buffer,length);
**
**          void enter_patches(char *,long);
*/

void enter_patches(buffer,length)

char *buffer;
long length;

{
    unsigned int offset;
    unsigned short value, current;
    char string[MAX_INPUT+1], term[MAX_INPUT+1];

    while (TRUE)
        {
        do
            {
            printf("Enter offset of word to change, or END to finish: $");
            fflush(stdin);
            fgets(string,MAX_INPUT-1,stdin);
            string[MAX_INPUT] = '\0';
            sscanf(string,"%s",term);
            if (!stricmp(term,"END"))
                return;
            }
        while (sscanf(string,"%lx",&offset) != 1);
        if (offset > length - 2)
            {
            puts("Offset out of range !");
            continue;
            }
        current = (*(buffer+offset) << 8) + *(buffer+offset+1);
        printf("Offset: $%06X, Current word: $%04X -> $",offset,current);
        if (scanf("%hx",&value) == 1)
            {
            *(buffer+offset++) = value >> 8;
            *(buffer+offset) = value & 0xFF;
            }
        else puts("Invalid input !");
        }
}


/*
** Function to write a block of memory out as a
** binary file.  The arguments are a pointer to
** a full pathname for the file, a pointer to the
** buffer that holds the data, and the length of
** the buffer.  The function checks whether the
** specified file exists, and if so checks with the
** user whether or not it should be overwritten. If
** all is well, the block is written to disk.  Any
** errors during writing cause the output file to be
** deleted.  The function returns TRUE if the file
** was written successfully, FALSE if not.
**
** Usage:   result = write_file(name,buffer,len);
**
**          int result, write_file();
**          char *name, *buffer;
**          long len;
*/

int write_file(name,buffer,len)

char *name, *buffer;
long len;

{
    FILE *fp;
    int c;

    fp = fopen(name,"rb");
    if (fp != NULL)
        {
        fclose(fp);
        printf("File already exists !  Overwrite it (Y/N) ? ");
        do
            {
            c = getchar();
            if (c == 'N' || c == 'n')
                return(FALSE);
            }
        while(c != 'Y' && c != 'y');
        }
    if ((fp = fopen(name,"wb")) == NULL)
        {
        fputs("Error while opening file for writing\n",stderr);
        return(FALSE);
        }
    if (fwrite(buffer,len,1,fp) != 1)
        {
        fputs("Error while writing file data\n",stderr);
        remove(name);
        return(NULL);
        }
    fclose(fp);
    return(TRUE);
}
```

The C Users' Group(UK)

A self-proclaimed intermediate C programmer, Mark Baines seeks advice and encouragement from the C Users' Group(UK).

I've known about the C Users' Group(UK) - CUG(UK) - for four years now and have always meant to join, but you know how it is. In fact it was a letter from a member of CUG(UK) in issue 17 of ST Applications that finally got my cheque book out. Having spent some time reading their back copies of the CUG(UK) journal CVu, I can honestly say that I waited too long.

The CUG(UK) was formed in 1987 as an informal, national group of C language enthusiasts which became formalised in 1988 with the formation of a committee and its first AGM. At first there was a strong Atari ST and UNIX influence to the journal which appeared at irregular intervals and in different formats and sizes until the editorship passed to the current Editor and Chair, Francis Glassborow. CVu appears six times a year, and is in A5 format with 64 tightly packed pages.

Most of the members of the CUG(UK) use IBM PC clones which is reflected in many of the articles, but the ST presence is still very strong. However, although some of the articles are reviews of PC or UNIX related matters, most of the contents is, of course, C related and of benefit to all C programmers. With the ST and TT range capable of emulating PCs and with UNIX appearing on the TT, even this specific material will be of profit to some ST Applications readers.

The C Users Group slogan is "The Organisation for Professional C Users - from Novice to Expert". The word 'professional' is used in the sense of 'competent, skilful, efficient, able...'. It is intended to include not only those who earn their living programming in C/C++, but also students, amateurs and hobbyists who aspire to writing compact, structured code. CUG(UK) has the stated aim of helping and supporting all C and C++ users regardless of their level of competence. My experience so far supports this view and this should reassure those ST Applications readers starting out or with little experience of C/C++ who are thinking of seeking this sort of support.

The CUG(UK) is currently maturing from being a largely, self-centred group to an outward looking, campaigning organisation concerned with bettering the lot of the C and C++ community as a whole. Many members include those who use or train others to use C and C++ professionally and the companies that provide the tools for programming such as Microsoft, Borland and Jensen & Partners International. Work-station specialists AI International, Instrumatic and Liant are also corporate members. These links and those with the BSI QA and ANSI/ISO standards bodies place the CUG(UK) in a good position in its campaign for better service from publishers and compiler producers, the fruits of which will benefit all C and C++ users.

Membership is by subscription costing £12 a year for individuals, £6 for students and £50 for corporate members (companies/ local groups). The membership year is from 1st September but you can join at any time receiving all the back copies of the journal for that year. As I joined in April I was offered the following year's subscription at 50% reduction! Back copies of CVu can be obtained for £1 each, a real bargain as they are all packed with material.

CVu is well produced and easy to read. Contributions are all voluntary from CUG(UK) members. As the editor has established a good rapport with book publishers, the latest C and computer related books are reviewed in every issue. Members can be asked to be put on the book review list and keep the book when finished, a nice perk! Programming problems are set for the readers to solve with code examples published or included on disk in the CUG(UK) source code library. This is a good way to pick up tips with ANSI standard code being encouraged at all times. There are the usual reviews of compilers and programming tools, articles for the inexperienced (written by ST Applications reader Paul Dettman), product bug lists, letters, questions and answers and feature articles on a wide range of topics. This is a good read; the editor is known for his high standards and that is reflected in the presentation and style of articles submitted.

The CUG(UK) source code library is rapidly growing, containing material capable of being ported to any platform. The ST/Amiga disk format is handled by 16/32 PDL. Although much of the ST related material can be got from any reputable PD library, there is easy access to PC and UNIX originated source code that can be ported to the ST/TT system with perhaps little work. Indeed, many of the little utilities you currently use on your ST developed in this way.

Membership details and a free copy of CVu can be obtained from:

Bill Anderson
The Membership Secretary,
CUG(UK)
14 Meadowside Road
Pangbourne
Berkshire
RG8 7NQ

The Chair and Editor can be reached at:

Francis Glassborow
C Users' Group (UK)
64 Southfield Road
Oxford
OX4 1PA

I hope that this little article may promote you to investigate further this useful and important organisation. I also hope that it will be the first of a series of such articles from other readers on their experiences of users' groups and the like. The further promotion of such organisations within these pages can only be of benefit to the ST community as a whole.

CAD Column

The release of Cyber Studio on cover disk encourages Joe Connor to plummet into the 3rd dimension.

News

Expressworks Ltd no longer support either Atari or DynaCADD and are concentrating on the PC marketplace. I contacted Ditek in Canada regarding future support for UK users and received an encouraging reply. Ditek are actively seeking a new distributor in the UK with enough clout to market the planned Unix, Next, Mac and Windows versions together with the existing Atari, Amiga and PC GEM versions.

It's good news that development for the Atari platform is continuing, with a Falcon version ready by the time you read this. Version 3 is still under development awaiting details for the Falcon 040 (what do they know that we don't?). With escape routes to most other platforms no DynaCADD user should be left without an upgrade path irrespective of the future for Atari.

A beta test version running under Windows on the PC was demonstrated at the Comdex/Fall 92 Show and is planned for release in March 93. The mouth watering specification includes:

High level Photo realistic rendering!

An Integrated Applications Development System including programmers shell, language, compiler, linker, source editor, Interface creator and Command list editor.

Invision Elite...

...is a new pixel bashing application offering an excellent range of options to cut & paste your bit images. An impressive animated opening sequence lures you onto the desktop. The interface includes pop out icons (similar to Claris CAD on the Mac) which are fast and intuitive to use. Here's some of the more exotic commands: gradient fills, instant access panning, smoothing, Atari clipboard support, multitasking support, unlimited size colour .GIF importing, CVG import. Requires a monochrome monitor, large screens supported. 1Mb memory recommended. No UK support as yet, so contact:

Power Thought Software, Tel/Fax: USA (416) 594-9355

Utilities

In STA 20 I commented on the lack of Atari equivalents for famous PC and Mac utilities and received some encouraging replies.

Screen Savers:

A couple of excellent PD screen savers are now available. Darklord and Rubricks both utilise load in modules for various screen effects. Most dongled software objects to screen savers because the stream of pulses is interpreted as keyboard activity. Happily both these screen savers can selectively disable keyboard activity, waiting for mouse movement before waking up.

Hard disk Utilities:

The producers of Diamond Back II have released a new product called Diamond Edge which offers defragmentation and optimisation facilities together with what they describe as a super set of features provided by other currently available software. Contact HiSoft on 0525 718181 for details.

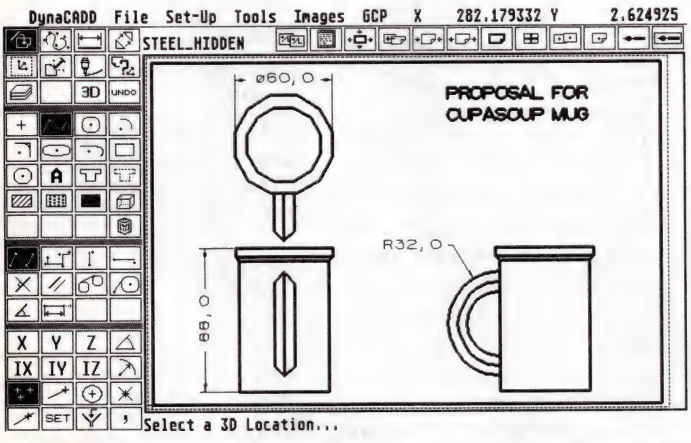
Atari's own Chkdisk 3 utility, isn't bad either, sort of a commercial version of DB II. Useful options include compress (but not defragment) partitions and diagnose/repair file problems.

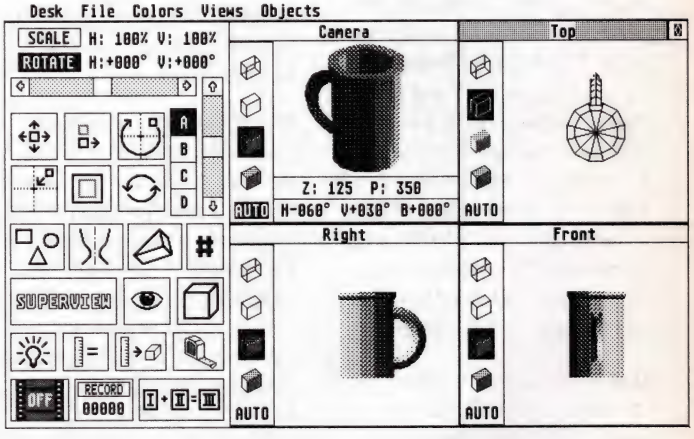
The Cyber Studio & DynaCADD Connection

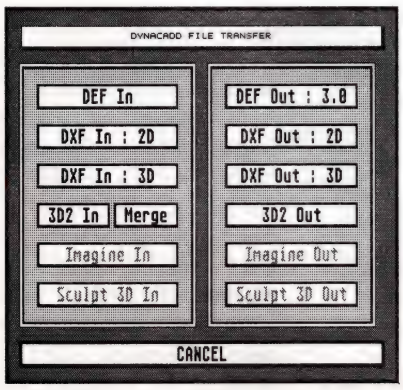
Despite being at opposite ends of the price spectrum, DynaCADD and the Cyber series work together remarkably well. DynaCADD provides very powerful 3D construction and 2D Drafting commands and Cyber Studio provides the 3D visualisation and animation to create a seamless product development environment from concept to final drawings. Unfortunately, at £650+VAT most Cyber users are unlikely to make use of this link. The latest DynaCADD demo is well worth exploring, though, as .3D2 files can be loaded, edited and printed out to a vast range of printers and plotters. IMG and GEM Metafiles can also be saved to disk.

Anyone interested in the latest DynaCADD demo, 3D2 to 3D DXF file conversion or any of the PD/Shareware mentioned in the Column, should contact me at:

65 Mill Road, Colchester, Essex, CO4 5LJ.
Email to: jconnor@cix.compulink.co.uk







Left: the DynaCADD file transfer options box. Note the 3D2 import/export and Merge options. Your Cyber Studio masterpiece could even be rendered using the latest Mac & PC software by exporting files using the DXF out 3D option.

Above left: DynaCADD is ideally suited to object creation and editing of existing 3D2 files. Once the design is finalised the completed object can be 'burned' into 2D and dimensioned as a normal component drawing.

Above right: the design loaded back into Cyber Studio for fine tuning before export to Cyber Paint and Cyber Control for final rendering and animation. Now where did I put those cover disks?

Right: up to three adjustable light sources provide shading control.

Classified Adverts

Classified adverts are free to subscribers.

Please use the form on page 58.

For Sale

Write On – Complete program with manual and special DesJet 500 printer disk, £15.00. Fontkit Plus v3.2 and C-Font £12.00. 0737 813611 (day) or 0737 350784(evenings). (26)

Amstrad SM2400 Modem, in carton with cables and manual, barely used, absolutely as new – with registered copy of FZDSTERM terminal software (the best on the ST): £85. Tim Cruise 0457 872221. (27)

3 or 4 old ST's 1MB and ?MB available for spares – offers? Also two floppy drives. 0702 202540. (25)

Casio FZ sample disks: huge library of quality sounds. Also soundpatches for most major synths (M1, D110, SY77, K4, etc.); swaps or sale. Sample CD's wanted. Ring for details: Andy, 0532 430177. (28)

STFM, TOS 1.4; Second Manual plus disk. Loads of other PD utilitiesl Zydec mouse; SM144 monitor. Quick sale: £140.00 the lot. No offers. Howard 0803 864674 evenings. (25)

Atari SC1435 colour monitor £150. Phone Fred on 081 809 6852 evenings. (27)

Atari Portfolio with 32K memory card: pocket PC with address book, diary, editor, calculator and spreadsheet. V good condition, quick sale £95. Crawley 0293 549858. (25)

Atari SC1224 colour monitor, vgc, £75 plus delivery or buyer collects. No offers. 0257 272119. (27)

ST original software: Daley Thompson, Rocket Ranger, K.O.2 – Winning Tactics, North and South, only £3 each. Hard Drivin'2, Killing Cloud, European Space Sim, Damocles only £5 each. Space 1889, F29 Retaliator, Flight of Intruder £8 each. Trimbase (relational database) £10. Phone John 0742 748794. (28)

Primax 2-way data switch box (Centronics), boxed as new, c/w two Centronic/Centronic cables and one Centronic/25-pin D male. Your "two peripheral problems" cured at a stroke! Only £45.00 Plus Golden Image hand scanner, boxed, manual etc. as new: £70.00 (£80.00 c/w Touch Up software). Plus Fleet Street Publisher v3.00, boxed, manual etc. £75.00. Or the whole lot for £170.00! Ring Bryan on 0298 78071 any time between 2pm and 10pm. (27)

Atari STFM 1MB RAM, 720K floppy, SM125 monitor, mouse, joystick £200 ono. Teletext adaptor and Market Breaker £90; will split. 1st Word Plus £25, K-Data £20, Michtron Utilities Plus £10, Super Conductor £15, Blood Money £5. All originals with manuals. Delivery extra. Phone: 0582 715451 after 6pm. (26)

Fontkit Plus v3 £10; Golden Image brush mouse with Deluxe Paint £15; ICD Cleanup ST hard drive utility £15. Phone 0256 896879. (26)

Serious STE – 4MB RAM; Ladbroke's Data Pulse hard disk drive (11ms access time, no bad sectors). Atari SM124 high-res monitor. Golden Image hand scanner with Touch-Up software. Forget-Me-Clock II. PageStream v2.1. Calligrapher Pro (Gold). NeoDesk 3. Fontkit Plus 3. Digita DG Base. Mini Office Spreadsheet and comms software. All boxed with manuals: £800. Call Dave 0705 698975 (Portsmouth). (27)

Still available, the following ST games, all originals with manuals: Elite, Corruption, Jinxter, Castle Master, Life and Death, Conflict Europe, Red Storm Rising. Call S. O'Connor on 081 748 5435 after 6.30pm. Each game £10. (26)

1040 STFM, d/s drive, TOS 1.2, blitter chip, Blitz cable and all "Summer Promotion" games (app. 22) + any PD utilities you want: £200. Call Christian on 0395 68227.

1040 STFM, d/s drive, TOS 1.2, blitter chip, Blitz cable and all "Summer Promotion" games (app. 22) + any PD utilities you want: £200. Call Christian on 0395 68227.

Atari SC1224 Colour Monitor with Leads – £99. Cubase V 3.1 (Latest issue) with original manuals and Dongle, and six Midi files – £150. Phone 0603-868381 (Norwich). (25)

Swap HiSoft C, K & R the C programming language, Flair Paint, and 1st Word Plus for Superbase Professional or a Mono Atari Monitor. Telephone:- 0623 654645 after 6pm (Alan). Leave a message if I'm unavailable. (25)

CASIO FZ Sample disks: Huge library of quality sounds. Also, Soundpatches for most major synths. Sale or swaps. Ring for details. Andy – (0532) 430177. (26)

OCR ROM cartridge (Augur) plus Hawk Colibri hand scanner. OCR – Instant loading from cartridge, very quick efficient recognition (up to 135 chars per second!), can save font libraries to reduce "learn" time; and text in ASCII/1st Word formats. SCANNER – 32 (1-4 bit) grey levels, 100-400dpi + Flairpaint, HJB Paintplus, Scansoft, power pack, manuals, interface. STW's best hand scanner/OCR software – BOTH FOR £150. Aladin Mac emulator V3 with roms + Startup files – £30. Phone David after 6pm on (0604) 586387 (25)

Atari ST Hard disc 20 Meg, DMA to SCSI to MFM, (SCSI or MFM Hard drives can be added). Uncased with Spectre GCR Emulator. All necessary software installed, works perfectly: £350 ono or may split. Tel: 081 6771294. (25)

F15 Strike Eagle 11, Tempus 2, Expert Pools Predictor (1992/3 Full version). £10 each or exchange all three for

Authorware

If you would like to see your software featured in the ST Applications Authorware column please send us a review copy of the software and a rough outline of the advertising copy you would like to be printed.

Morse Master

The complete morse trainer and simulator, with realistic 'on-air' emulator and integral editor, with complete control of your listening equipment. In addition to sending, your Atari can also receive and decode morse from your own key using the supplied interface cable. Usable by novices and professional radio operators alike. Send Cheque/PO for £29.99 payable to Boscad Ltd at: 16 Aytoun Grove, Balbridgeburn, Dunfermline, Fife, KY12 9TA. Telephone (0383) 729584 evenings for technical information.RAE Morse Test

Selectable letter/number groups, thinking time, note pitch, morse generation from keyboard for CQ; plus save to disk, etc. Instruction manual and disk for £7 or SAE for more details. R L Tuft, 62 Admirals Court, Thirsk, North Yorks. YO7 1RR. Telephone: 0845-525082

Pulser

A low-resolution programme which cycles the colours as you draw ... and keeps them moving. Create stunning graphics with movements. Every circle, line, square, ray etc can PULSE in any direction, all on the screen at the same time. £7.50 inclusive or £2.50 (refundable on upgrade) Demo 1 double sided or 2 single sided disks (state which). David J Fright, 113 Waytemore Road, Bishops Stortford, Herts.

STEN

ST ENthusiasts disk magazine – for your copy send a disk + SAE to: Dave Mooney, 14 School Road, Morningside, Newmains, Lanarkshire.

SynTax

The ST adventure magazine on disk! Reviews, solutions, hints, special features and much, much more. Runs in colour only. Produced bi-monthly. **SynTax** costs £3.50 an issue, £20 for a year's subscription. Cheques made payable to S. Medley should be sent to: 9 Warwick Road, Sidcup, DA14 6LJ.

Kitchen Design Program

Create kitchen plans, and elevation views to scale from a wide selection of units and appliances with worktops, pelmets, etc. High resolution mono only. Lawrence Elliott, 42 Gwaun Coed, Brackla, Bridgend, Mid Glamorgan CF31 2HS.

Clip Art

Clip Art specifically for Christian and Community Magazines. Seven disks of IMG images for DTP programs supplied with a printed picture catalogue of every image. Cost: £3 per disk plus P&P: total of £23 for the set. Cheques payable to: Peter Kempley, KemCom Designs, 21 Chart House Road, Ash Vale, Aldershot, GU12 5LS.

Calamus Manual

This self-tutorial guide incorporating sections on frame drawing, entering text, changing fonts and styles, importing text and images, drawing boxes and lines, loading, saving, printing, text rulers, headers and footers and page numbers. Available at £5 (including postage) from: David Waller, The Sandon School, Molram's lane, Great Baddow, Chelmsford, Essex, CM2 7AQ. Cheques should be made out to 'Sandon School'.

Genealogy

Newgen, my genealogy program, runs on any ST(E) or TT and is easy to use; it will print family trees, etc. Send large SAE for details or £17 for program. E G Richards, 2 Peckarmans Wood, London SE26 6RX.

Educational Adventures

For ages 5-13. 88% in ST Format. £12 each. 50p per disk for demo's. CVS, 18 Nelson Close, Teignmouth, TQ13 9NH. Tel: (0626) 779695.

RAE Morse Test

Selectable letter/number groups, thinking time, note pitch, morse generation from keyboardfor CQ; plus save to disk, etc. Instruction manual and disk and SAE for more details. R. L. Tuft, 62 Admirals Court, Thirsk, North Yorks, YO7 1RR. Telephone: 0845-525082.

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Striker. Telephone 0992 20663. (25)

Data Manager Professional – Super Base Personal – £15 each, Degas Elite – £10, SBA Cash – £25. Tel 0422–204199 anytime. (25)

Golden Image Handscanner, in near mint condition – used only twice. Quick sale due to change of computer. Original price £149, My price £100 ono. Call Hilroy in the evenings (or leave a message during the day) on 081–851–2403. (25)

Atari STFM 1040 1Mb Ram, 1/2 Mb Internal + 1Mb External Drives – £125, Phillips CM8833 Monitor £100, Boxed games: Falcon (+Mission 1), Dungeon Master, UM5, Star Trek, Populous, Colourspace etc. All £8 each. Call Richard 0525 851543 after 7pm. (25)

520 STm + SF354 Single Sided Drive. Offers around £125. (Boxed as new + Disks.) Call 0462 686227. (25)

520 ST With 2.5 Meg Ram and s/s External Drive – £180 (Unboxed so buyer needs to collect) – Includes some software. Timeworks Swiftcalc (Spreadsheet with excellent Graphing Program) – £18. Hyperdraw £6. Atari Introduction to Sound & Music (3 disks and cartridge – £14. Tel 031–334–1114. (25)

Deluxe Paint (with animation) – £15.00, K–Word 2 word processor V2.25 unregistered – £10.00, K–Data database unregistered – £12.00, Mark Williams C update Version 3.0.6 includes complete resource editor and CDS C source Debugger with manuals – its not much use to me as I don't have version 2 to update! – £10.00. 1st Word Plus V3.1 – £20.00, F–19 Stealth Fighter – £15.00, Purple Saturn Day – £5.00, Colossus Chess – £8.00. All prices include postage in UK or deliver in St Neots area or Walthamstow. Contact Peter Wilson on Huntingdon (0480) 213 617 evenings or weekends. (25)

Atari Laser SLM 804 Printer fully working £250.00 + delivery. Includes Manual + Printer Drivers. Tel 0279 656 280 – Caroline. (25)

DeskJet Ink Cartridges for sale, Black Ink Type HP 51608A. Limited quantity only at £10 each. Please phone 051 355 6675 (eves). (25)

TOS 2.06 Kit £40, Atari Internals Book £6, Hyperpaint £5, ST Basic Book £1, Lattice C V5, Devpac V2 £30. – Barry on 0224 869558, evenings. (25)

STE 4Mb, 52Mb Quantum HDD (ICD Card), SM124 Monitor, 2 Floppies, Lattice C V5, Hisoft C Interpreter, Tempus 2, Diamond Back, WP, Knife ST, Loads of Utilities + PD, Books, Mags. £850 ono. Jeff (0992) 574973. (25)

Epson FX 1050 Printer (Fast, 9–pin, Wide Carriage), cost £600.00 + Sheet Feeder for above, cost £175.00 + Spare Ribbons + Box Fanfold: £125.00 (Buyer collects) Contact Steve (081–693–9864). Also Word Up v 2.0 (Gem) Cost £50.00: £10.00. (+ p/p). (26)

520STM with SF354 Single Sided Drive. Boxed as new with original disks. Offers around £125. Ring (0462) 686227. (25)

Atari 520STFM with One Meg Internal and External Drives. Mouse and many games – £175. Proflight from HiSoft, Tornado Flight Simulator, as new, boxed and unregistered £15. Monitor change over switch, Mono to Colour £6. Fast Basic, boxed. Manual and disks £10. (Berks) 0344. 771591. (26)

ROM cards for Korg M1–Akira MPC 11, Valhalla Gold B101. £25 each or swap for similar. Steinberg Pro 12 extra–level sequencer + manual. £20 ono. Hyperpaint £5. Dr. T Copyist Apprentice – basic but good notation software £45. Book – Musical Applications of the Atari ST – £3.00. Manual for 'First Word' £4.50. – Andy Stockley, 16 Beech Close, Bugbrooke, Northampton, NN7 3RB. (26)

Atari 520 STFM recent purchase, little used. £150. Tel 03477 553. (25)

Timeworks 2a £35. Teenage Queen, Kid Gloves, Bombuzal, Macadam Bumper, G–Nius, Mike Reads Pop Quiz, Advanced Fruit Machine Simulator, Locomotion, Pro Powerboat Simulator, Uninvited, All £3 each. Flipside, Space Station, Mouse Trap, Train Set 2, Prince. £2 each Inc p + p. 0626

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For the beginner and advanced user alike. Written by a practising teacher. Includes worked examples and Quick Reference Section, as well as a Guide Start pull-out. Partly covers That's Write 1.52 as well. Price £5 inc. p&p.

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CRITICAL MASS

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Easy to use unique double file selector format.

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To receive further details about the above SHAREWARE software for the Atari ST range, please send an SAE or £1.50 for a copy on disk. To receive information about (and often copies of) new software and upgrades, why not register with Critical Mass for only £5.00?

Critical Mass Concepts, The Fishergate Centre,
4 Fishergate, YORK YO1 4AB

62271 Evenings & Weekend. (26)

520 STFM, 1MB, AT Speed C16, 5 1/4" Disk Drive, Colour (VGA Multisync) Monitor. £350.00. Metacomco Pascal 2 £35.00. Hisoft Craft 2 (Unix Shell and Text Editor) £30.00. Mavis Beacon Teaches Typing £15. Blitz Turbo Disk Copier £8. Trackerball £15 – Mark 0942 55717 Manchester Area. (26)

Superbase Personal V1 with manual £15 or exchange for Knife ST or WHY? Tel. Mark (0772) 720075 (evenings) (26)

Brother HR5 Portable Printer £20.00, Yamaha FBO1 Sound Module £90.00, Tascam Porta-One Multi-Track Cassette £175.00, Cheetah MQB Midi Sequencer £120.00, Cheetah MK5 Midi Keyboard £50.00, Casio MT750 Midi Keyboard £120.00. Ring Ian 0536 510896 (Kettering) (26)

Sub-Logic Flight Simulator 2 £12. Telephone Ken on Romford (0708) 723956. (27)

ZX Spectrum 48K, Interface One, Microdrive and Thermal Printer. Two complete sets as above plus other interfaces, Books, Software, Paper, and over Fifty Microdrives etc. Suitable starter for a pair of enthusiasts, low offers acceptable from the right person! North London. 081-368 3176. (25)

256Kb Simms (4 off). One pair Upgrades A 520 STE to 1 Meg. Suitable STES only. £5 each. Paul – 081-800-0361 (London W15). (25)

Calamus 1.09N – £70, DR. T's Sample Maker Version 1.5 – £70, Atari ST Machine Code Book – £10, Multigem Multitasking Software (Works well) – £50, Aladin Macintosh Emulator – No reasonable offer refused – Tel Nial on (0269) 845826. (27)

One Meg, Upgrade for 520 STE. £10 including instructions – Call Mike on 081-552 5630. (25)

The Astronomy Lab – Supercard 2 – That's Write v 1.21 – Degas Elite – Image Copy – Fontswitch v 3.28. All at £6 each. STOS (Game Creator) £12: Easydraw 2 £15: Quick ST V 3.0 £8: Monitor Change-Over Box complete with Leads £12. 'Phone Pete on 0423-330578. (26)

Mega 1 ST. SM 124 Monitor. Vortex 40 Mg HD. STAR NL 10 9 Pin Printer. All items unmarked and in perfect working condition. Must be the bargain of the year at £500. Microsoft Write – Wordwriter – Swift Calc – VIP Professional – Data Manager – Data Mng Professional – Super Base Personal £15 each. Degas Elite £10, Equinox SBA Cash £25. Tel 0422-204199 any time. (26)

Atari STFM 520 plus Mouse Master £155, Philips CM8833 Colour Monitor £140, Atari SM124 Mono Monitor £70, 2nd Floppy drive £30, Daatascan Professional 400dpi Hand Scanner £60, Atari ST 3D Graphics and Atari ST M/C Language £8 each, User Guide to Timeworks DTP £5, All in original packaging. Must sell the lot as government grant run out (yep, me student) and my bank manager is out for my blood! Somebody but it please. Phone Mark on 0582 468664, near St Albans.

Software – Megapaint £45, Cyber Sculpt + Studio + Control £65, Timeworks DTP v1.12 + Fontkit 3 + Fonts £35, Games – Dungeon Master, Chaos Strikes Back, Lemmings, Cadaver, Elite, Gods, Monkey Island, Elvira, Dega Vu 11, Supremacy, Stellar Crusade, Populous, Imperium, B A T, RVF Honda, Zenon 2, Fish – £5 each or £100 all games. All originals. Phone Mark on 0582 468664.

Wanted

Spectre GCR for around £150. May consider Spectre 128 for around £100. Email to: jconnor@cix.compulink.co.uk. Tel/Fax: 0206 851400; 65 Mill Road, Colchester CO4 5LJ. (26)

Information/manual about using Triangle 40MB non-autobooting hard drive with STE, NeoDesk and Timeworks. I can't get them to work! If you can help contact Ian on 0895 638018 evenings.

HyperDraw or EasyDraw (vector art program). Please contact Andy on 0633 876878. (26)

Atari 8-Bit Serial Interface and Null Modem Cable for loan, or, if cheap enough, to buy. Colin Blackburn. 0582 – 482170 Evenings. (25)

Scanner & PC Keyboard & Adaptor Board for 520 STE, Please Scanner with software with 400 dpi to save IMG etc. Would like to convert to PC Keyboard for ST. Keyboard & Adaptor Board required. Ring Abingdon 0235 – 834613 after 5pm. with details & price. Ask for Rod. (25)

Original (not budget) versions of Infocom's Hitch Hiker's Guide, Bureaucracy or Nord & Bert. Also Tenth Frame by Access. Phone Steve on 0923 265539. (26)

PC-Ditto Software to enable me to evaluate some PC software before buying a Hardware Emulator. Also can anyone who has used Compo's and Vortex's 286 16 MHz Emulators advise me which is the better. Thanks – Paul (0308) 24072 after 6pm. (26)

Keyboard PCB for Atari STFM. Can anyone supply me with a replacement Keyboard Printed Circuit Board for my STFM, mine is cracked, possibly from an already defunct ST. – Contact Jim 0298 24061 – Buxton, Derbyshire. (25)

2400bps modem, any make. Must come with instructions and all leads. Tel: 0305 860245 any time. (26)

General

STatic BBS. (0224) 648277. All speeds up to 14,400 bps x 32bis, HST, V42 bis, MNP. Carrying Fnet, NeST, Fido and TurboNet message/file echoes 24 hours. ALL ST users welcome. Includes Flopyshop support area. Aberdeen, Scotland. Free BBS. (25)

My Little Phoney BBS (0793) 849044 – all speeds up to V32bis and HST. Specialist Atari ST BBS, carrying all Atari-relatedfidonet and Nest Echoes, and importing international ST file echoes (AFN/ADN). High speed and technically aware callers are especially welcome! (R)

Crystal Tower BBS 01-886-2813 24hrs 300-2400 Baud (Towernet System) Atari ST, PC, Languages, Comms etc + much more. All welcome. (R)

Guide Dogs for the Blind Appeal – Please send used postage stamps to help this worthy cause to: 19 Dunloy Gardens, Newton Abbey, Co. Antrim, BT37 9HZ. (R)

STARGATE BBS: 0476-74616 V21 V22 V22BIS V23 Atari ST section; also PC, Amiga and Comms areas. Comms help and advice for ST and PC via ST Editor. Give it a call and leave a message. If you need comms software get Uniterm from the ST Club. (R)

Professional typeset from 1st Word disks. Over 100 Faces. Output to high quality PMT. Much better than laser. Also cheap printing A5/A4 single colour. Contact: AZTRAL Games, PO Box 8, Lowestoft, Suffolk, NR32 2AS. (R)

The Confederation BBS – Support bbs for all "HITCHHIKER" software releases and GFA programmers. All the latest PD/Shareware from Europe and USA as well as Netmail message areas. On line each evening 10.00pm to 7.00a.m., at all speeds up to 2400. Give us a call today and you will not be disappointed as we are the most friendly BBS in the country – dedicated ST BBS only. 0533 413443.

Help the Hungry in Africa. Please give your support to those facing drought, hunger and ruin. You can help by sending any old coins, stamps or used stamps to – OXFAM TRADING, Stamp & Coin unit, Murdock Road, Bicestor, Oxon, OX6 7RF. (37)

'Alternaties fanzine – Quarterly. £1 per issue. Issue 9 out now (Autumn), Issue 10 out soon. Send £1 (which includes p+p) and address to Alternaties, 39 Balfour Court, Station Road, Harpenden, Herts, AL5 4XT. Writers, visionaries, artists needed. Details to the above address.

Help

Does anyone who uses Superbase Pro know how to print out forms in Graphic Mode on a BJ10EX? All I get is 'Can't open printer' message. Any GDOS files, Printer Drivers or helpful advise gratefully received. Does anyone know if there's an update to V3.02 coming, and who owns the rights? – Contact Chris Good, 34a Park Parade, Leigh Park, Havant, Hants, PO9 5AD. (26)

Contacts

S.T. Contacts wanted, D.T.P., Clip Art, Write to A.J.W, 73 Baden Road, Gillingham, Kent. ME7 1QZ, England. (26)

User Groups:- Atari ST Christian User Group. Mutual support in using the ST in all aspects of Church work. Send for our Introductory Disk. Revd. Joe Clemson, 'Woodville', Redesmouth Road, Bellingham, Hexham, Northum-

Atari Introductions

We are offering the full series of 'Atari Introduction' software packs at special reduced prices:

Basic Programming	£18.50
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Full review of these items in issue 23 of ST Applications. Please use the left hand side of our order form on page 57 to order these packs.

The ST Club
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SCANNER MANAGER

A specialised database system for all scanner owners, this software has been designed to be very easy and quick to use. Some of the features in the current software are: ability to store up to 20,000 channels/frequencies, up to 1000 channels held in memory for instant access, very fast searching and sorting of frequencies.

For further details contact: Stuart Coates. 9 Links Road, Kibworth Beauchamp, Leicester LE8 0LD.

STTRACK

Use up to four light beams with your ST. Measure speed and acceleration. Write data to disk for spreadsheet. Invaluable for science National Curriculum AT4. High resolution only. Software and manual with full details £20. Cheques payable to:

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Slimpack box for 12 disks - £ 1.40
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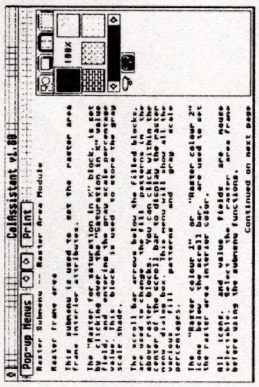
Please insert the following advert for ..... Issues under the following classification: / ST Contacts / For Sale / Wanted / General / User Groups. Adverts are free to ST Applications subscribers.

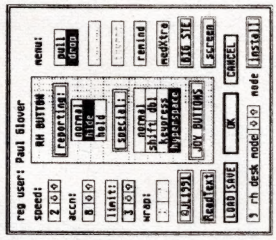
Warning: It is illegal to sell unauthorised copies of commercial software - All software offered for sale must be in the original packaging with manuals etc. Anyone found to be selling pirated software through the classified advert listings will be reported to the appropiate authorities. Software publishers do not normally offer user support or upgrades to users of software purchased second hand.

ST Club Product News



CalAssistant - £19.95

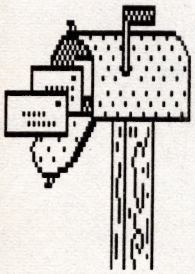
WARP 9



Mouse Tricks 2
Multiprint - £9.95ea

TypeWrite Clip Art
£8.95/set

Use this space for any feedback you'd like us to read.



ST Repairs

Our Service department can repair ST's in minimum time at competetive rates. We can arrange for courier pickup and return delivery of your machine to ensure it's safety. We even have a same day service which will ensure your machine is given priority and subject to fault, completed the same day. We can fit memory upgrades, PC Emulators, Security devices, ROM upgrades, hard drives to Mega STE's etc.
We offer a Quotation service for £15 for which we will examine your machine and report back with an exact price for repair. If you do not wish to go ahead with the repairs then just pay the £15. However if you do go ahead then the charge is included in the minimum charge. Please note: The minimum charge covers labour, parts are extra.

Quotation	£	15
Min repair charge	£	35.25
Courier Pickup	£	11
Courier return	£	6
Same day service	£	15
STFM(E) PSU	£	39.99
1Mb Internal drive	£	39.99
A/B Boot switch	£	4.99

Printers

Star SJ48 Bubblejet	£210
Star LC-20 dot matrix	£124
Star LC-100 colour dot matrix	£165
Star LC-24/100 dot matrix	£179
Star LC-24/200 dot matrix	£209
Star LC-24/200 colour d/m	£259

All Star dot matrix printers include 12 months on site warranty. Add £3 for Centronics cable.

STE Packs

520STE	£229
1Mb 520STE	£239
2Mb 520STE	£274
4Mb 520STE	£320
New- 8833MKII colour monitor with Lotus challenge 2	£189.99
Cable for ST/STE please specify	£9.99

Data Pulse Plus

The Data-Pulse range has recently been re-designed. The Data-Pulse Plus range now offers a more compact case that cuts down on noise even more, all ports are marked, an extensive range of software utilities are now included and our range of special offer utilities has been expanded confirming our commitment to future support. We are continually improving the quality and price/performance ratio of our drives. We have recently incorperated the MAXTOR hard drive mechanisms which offer low power, cached 11ms access time, 127Mb formatted capacity, 150,000 Power on hours mean time between failures and all for a lower price than our old 105Mb drives.

- ☑ All drives are formatted/partitioned and tested ready to "plug in and go".
- ☑ Extremely low noise.
- ☑ Fully Autobooting and Autoparking.
- ☑ DMA device selector & On/Off switch on front of case.
- ☑ DMA Out port for daisy chaining extra drives/Laser printer.
- ☑ Full metal case measuring 300mm x 285mm x 51mm (wdh), providing good shielding and monitor stand.
- ☑ High quality ICD boards including on board clock and controller software.
- ☑ All drives include Vault archiver, Backup software, Virus killer, MCP shell program, Midistudio Master demo.

Data-Pulse Plus 40Mb ICD	£	289.99
Data-Pulse Plus 52Mb ICD	£	319.99
Data-Pulse Plus 80Mb ICD	£	379.99
Data-Pulse Plus 127Mb ICD	£	429.99
Data-Pulse Plus 213Mb ICD	£	539.99
HD Turbokit	£	4.99

Data Pulse 20 Mb Floptical

The New Data-Pulse Plus Floptical drive, is a 3.5" SCSI mechanism, ICD host adaptor, high quality Data-Pulse Plus case and psu. The drive is capable of storing over 20Mb of data on a single 3.5" Floptical disk and can also read 720K and 1.44Mb 3.5" floppy disks. The average access time is just 65ms and the data transfer rate is 200K per second, 6 times faster than floppy disks. The floptical is available either as a stand alone unit or as an upgrade to new and existing Data-Pulse(Plus) users where it would be ideal for fast data backup from hard drive.

20Mb Floptical	£439.99
20Mb Floptical disk	£24.99
Floptical Upgrade to Data-Pulse (Plus) HD	£319.99
Diamond Back II	£29.99

New Unlimited Storage capacity

Aries Upgrades

The Aries Upgrade board is an in house designed, Multi layer board utilising high density ZIPP RAM chips. The board has been designed to allow progressive upgrading from the base 512K up to 4Mb. The board does require some soldering but once installed is very reliable. The board is hand assembled in our workshops by skilled technicians and is fully tested before despatch. It also comes complete with fitting nstructions and test software. Our technicians can fit the board to any ST for a small fitting charge. We can arrange courier pickup and return to ensure fast turn araound. A same day fitting service is also available. Please phone for further details of courier and same day service.

Aries Upgrades (any ST(F)(M))

512K Aries board	£	39.99
2Mb Aries board	£	79.99*
4Mb Aries board	£	129.99*
Courier pickup	£	11
Courier return	£	6
Fitting charge	£	15
Same day charge	£	15

Please check the configuration of your machine before ordering.
** = Special offer*

Data-Net

Data- Net is a high speed network solution developed in house at Ladbroke Computing for the ST/STE. Ladbrokes Data-Net hardware consists of an unobtrusive cartridge which plugs into the cartridge port of your ST/STE and connects via Coaxial cable and BNC connectors. The Data-Net hardware is fully Lantech compatible and can be used with Universal Network software.
The Universal Network software is a Multi tasking network package which does not tie up the server whilst drive or printer accesses take place. It allows the sharing of Hard drives and Centronics printers anywhere on the Network. Nodes can also Auto boot accessories from a host's hard drive.

NEW PRICE

Data-Net Node Consisting of 1 Datanet hardware node + 1 Universal Network Node software only

£99.99

Silhouette

Silhouette is a bit image and vector graphics drawing program with Auto tracing. The package offers Auto- Tracing, Beziers, B-Splines, High resolution gray scales. Supports FSM-GDOS, requires 1Mb ST or TT High resolution. Imports: IMG, DEGAS, TINY, MacPaint, GEM, SGF. Exports: IMG, GEM(1,3), SGF, DXF, EPS(Postscript).

Only £60

Aries SIMM's

Special Offers

512K SIMM Upgrade for STE
£11.99

2Mb SIMM Upgrade for STE
£47.99

4Mb SIMM Upgrade STE
£92.99

Please check configuration before ordering

The New Falcon 030 £479.99

1Mb RAM, 16MHz 32 bit 68030 processor, 32MHz 56001 Digital Signal Processor, 8 channel 16 bit CD quality DMA sound chip, Microphone input for stereo sound digitising, 65536 colours in 320x200 mode, 256 colours in VGA mode. SCSI II bus, Internal IDE hard drive interface, Multi TOS Multitasking operating system.
Phone for VGA monitors, IDE hard drives, SCSI hard drives etc.

The NEW Brush Mouse

- ☑ *150 Dpi resolution*
- ☑ *500mm/SEC Tracking speed*
- ☑ *Switchable between ST/Amiga*
- ☑ *Opto/Mechanical Mechanism*
- ☑ *Includes Deluxe Paint ST*
- ☑ *Direct mouse replacement*

£24.99 *with D-Paint* **£19.99** *without D-Paint*

GI Hand Scanner £119.99

The Golden Image Hand Scanner for the Atari ST features a 105mm scanning head, variable contrast control, user selectable scanning resolutions of 100, 200, 300 and 400 Dpi, one letter mode for high contrast B/W images and 3 photo modes for various shades of grey. The high quality hardware is backed up by two of the most respected graphics packages around. Migraph's Touch Up for scanning and editing hi-res and grey scale images and Deluxe Paint art package for lower resolution colour.

- ☑ 100, 200, 300, 400 Dpi scanning resolution
- ☑ 105mm scanning head
- ☑ 1 letter mode, 3 photo modes
- ☑ Includes Touch Up
- ☑ Includes Deluxe Paint

Scanlite: *is an accessory which allows the scanning and saving of files whilst your favourite editor or DTP package is running. The accessory supports Golden Image, Migraph, GeniScan and DAATAscan Hand Scanners.* £20

GI Optical Mouse £24.99

The Official Golden Image Optical Mouse is a high quality, 3 button, replacement mouse. The fully optical mechanism means no moving parts and offers far higher reliability than opto/mechanical mice.

- ☑ 250Dpi, 500mm/sec tracking speed
- ☑ Fully Optical
- ☑ Mouse mat included
- ☑ Switchable ST/Amiga

GI External drive £54.99

The Golden Image External 3.5" Floppy drive for the Atari ST features 720K formatted capacity, double sided double density, Through port compatibility for older ST/STM machines, external PSU.

- ☑ 720K Formatted capacity
- ☑ New Low price (no track counter)
- ☑ External Power Supply
- ☑ Daisy Chain Through Port

GI Mouse

The Golden Image Opto/Mechanical Mouse offers 290 Dpi resolution, 2 Microswitched buttons for greater reliability and crisper, more positive resonse, Anti-static silicone rubber coated ball. Also includes mouse mat.

Only £14.99

Jin Mouse

Don't be deceived by the low price of this mouse. Mass production of the Jin mouse has resulted in a high quality Opto/Mechanical mouse featuring 290 Dpi resolution, 500mm/sec tracking speed, Anti-static silicone rubber coated ball.

Only £9.99

Ladbroke Computing International

Ladbroke Computing International are the longest established Atari dealer in the U.K. We have developed an extensive customer service policy which involves testing of all Hardware prior to despatch to ensure that goods arrive in working order, offering free advice and support over the phone and keeping customers informed. Although our prices are not always the cheapest we do endeavour to offer consistently good service and backup. All prices correct at copy date 28/09/92 (while stocks last), and are subject to change without prior notice. All prices include VAT but exclude delivery. Add £5 for next working day courier delivery, add £10 for Saturday courier delivery (mainland U.K only). Add £3 for postal delivery, only on items under £50 (check with staff before ordering). All prices available on Mail Order. Shop prices may differ. Shop/Mail order premises: 33 Ormskirk Road, Preston, Lancs, PR1 2QP. Open Mon-Sat 9:30am-5:00pm. Phones answered from 9:00am. Ladbroke Computing International is a trading name of Ladbroke Computing Ltd. BFPO addresses overseas, deduct 17.5% VAT and add normal U.K carriage.

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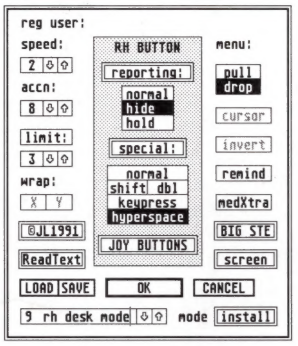
Mouse Tricks 2



* Mouse Tricks combines many of the functions of existing mouse utilities in a single desk accessory and adds numerous extra functions of its own.
* Mouse Tricks can set up suitable modes of mouse behaviour for particular programs. An optional screen saver is also included.
* Mouse speed can be reduced as well as increased. This allows a cross-hair mouse add-on such as "Tracey" to trace artwork of any size.
* All the functions of Mouse Tricks can be adjusted through a set of easy to follow dialog boxes.
* As many as 20 different settings can be named and saved, and each mode can be selected via a dialog or a user selected keycode.
* Mouse Tricks keeps a list of up to 40 different programs; for each program on the list you can specify both the mode you wish to be installed when a program is run, and the maximum amount of memory initially available to that program.
* Mouse Tricks contains a text reading utility, Read Text, with which you can load, read and switch between as many as eight text files from within any program that allows access to desk accessories.
* Read Text can also be invoked by double-clicking on the desktop icon of the file you want to read, or by pressing a user defined keycode.
* Big STE is a virtual screen utility that uses the STE's video display hardware to provide instantaneous smooth scrolling around virtual large screens of any (feasible) dimensions, with the option of an interlaced display for any screens with double (or greater) the normal screen height.
* Tutorial function to help you learn to use Mouse Tricks.

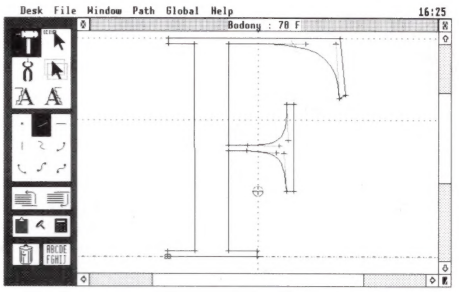
just **£9.95**

The ST Club
2 Broadway
Nottingham
NG1 1PS
Phone (0602) 410241

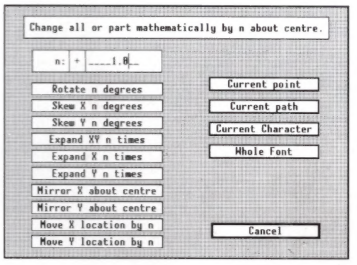
Comprehensive 70-page ring-bound manual supplied.

Fonty
Calamus Font Editor

This is a fully featured editing program for creating and editing Calamus CFN-format font files. Also, when used in conjunction with C-Font or Fontkit Plus, CFN files created with Fonty can be used to generate sets of bit-mapped fonts for use in packages such as: K-Spread4, Degas Elite, Timeworks DTP, Calligrapher, That's Write, Redacteur 3, and Wordflair.



Fonty features include: draw mode icons (Hammer mode, Pliers mode, Move mode, Select path mode, left and right kern mode), Grids and Guide Lines, Manual and Automatic kerning, Backgrounds for tracing (a Degas picture or a complete GEM font), a full feature Calculator to mathamatically manipulate fonts, and Window scaling. A separate program, PFB2CFN, reads a Postscript Type 1 Font file and copies it into a Calamus CFN font file.



£11.95

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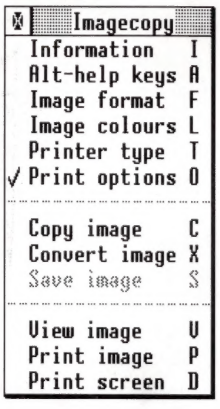
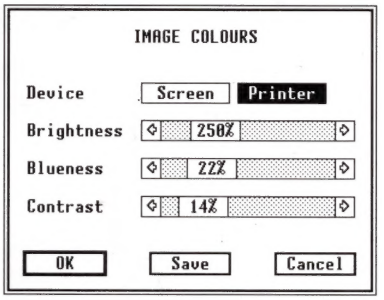
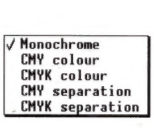
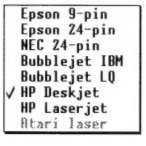
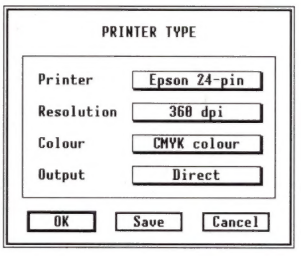
Imagecopy Colour











just **£14.95**
Upgrade from Imagecopy - £4.95 and rturn master disk

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2 Broadway
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Phone (0602) 410241

The latest version of Imagecopy allows you to print colour images on a dot-matrix or inkjet printer. Colour images can be printed in any of the standard printer resolutions, and colour quality can be adjusted to increase the brightness, blueness and contrast of an image. If you don't have a colour printer, Imagecopy can print colour separations which may be superimposed to produce a full-colour image. In addition, the colour facilities can be used to improve the print quality of colour images which are printed in black and white.

Resolution options have been extended to offer an extra resolution for 9-pin printers (72 dpi), and another extra resolution for 24-pin and LQ bubblejet printers (60 dpi). The Laserjet slot contains two extra resolutions (200 and 600 dpi). These should work with the new HP Laserjet 4 printer.

The Colour menu offers five choices: Monochrome, CMY colour, CMYK colour, CMY separation, and CMYK separation. The colour separation modes can be used to print full colour images from a monochrome printer.

Because images normally print darker than they are displayed on screen, you can use the Imagecopy brightness setting to compensate for this. If your printer information specifies a 'gamma correction value' you can convert this to a brightness setting. The brightness setting can also be used to improve the way that colour images are printed or displayed on a monochrome printer or monitor.

A Blueness setting is available to compensate for the fact that colour printers sometimes print blue with a purple tinge. The Contrast setting increases the contrast between light and dark colours.